THE MEDICAL NEWS.

A WEEKLY JOURNAL OF MEDICAL SCIENCE.

VOL. LIX. SATURDAY, OCTOBER 17, 1891. No. 16.

ORIGINAL ARTICLES.

THE PATHOLOGY OF PERNICIOUS ANEMIA.[1]

BY J. P. CROZER GRIFFITH, M.D.,
CLINICAL PROFESSOR OF DISEASES OF CHILDREN IN THE UNIVERSITY OF PENNSYLVANIA,
AND
CHARLES W. BURR, M.D.,
OF PHILADELPHIA.

ALTHOUGH the causes and nature of the various affections that may be called forms of anemia are at present so obscure, yet, for purposes of study, some method of classification of these forms becomes almost a necessity. The difficulty of the subject is perhaps the reason for the number of classifications that have been proposed.

In a previous publication by one of us (*Cyclopedia of Diseases of Children*) anemia was defined as a diminution of the blood *in toto*, or of its albuminous material, blood-cells or hemoglobin, and a system of classification was suggested. We would now propose the following tabular scheme, which is somewhat modified from that in the publication referred to, and which we admit to be imperfect and only provisional:

- Anemia
  - Non-cytogenic
    - Hemolytic
      - Pernicious anemia.
      - Other toxic anemias.
      - Parasitic anemias [some forms].
    - Oligocythemic
      - Parasitic anemias [some forms].
      - Post-hemorrhagic anemia.
      - Anemia from loss of albumin.
      - Anemia from malnutrition.
  - Cytogenic
    - Oligochromemic
      - Chlorosis.
    - Leucocytic
      - Leukemia
        - Splenic.
        - Lymphatic.
        - Medullary.
    - Non-leucocytic
      - Simple constitutional anemia
      - Splenic anemia.
      - Lymphatic anemia.

The terms "primary" and "secondary" are best avoided altogether, as they have so frequently been misapplied. "Cytogenic" and "non-cytogenic," though not interchangeable with them, are certainly preferable.

In the light of all that has been written, one might be disposed to regard the foregoing tabular classification as arbitrary and unnatural; and the opinion might be, as it has been, advanced that there are few sharp lines of demarcation between the various forms of anemia. Thus, it has been maintained that chlorosis and pernicious anemia are closely allied, and several instances have been reported in which a transition from one disease to the other had taken place. Luzet has published a most striking instance of this apparent transformation. Leukemia was claimed by Wood twenty years ago to be nearly related to, or perhaps identical with, lymphatic anemia, and there have been a few cases reported, as, for example, by Mosler and Fleischer and Penzoldt, in which the latter disease seemed to be transformed into the former. Pernicious anemia has in some instances appeared to be closely allied to leukemia. Musser, for example, published a case in which the blood at one time indicated the existence of leukemia, though the condition later appeared to be one of pernicious anemia; and Leube and Fleischer have reported cases apparently the converse of this.

In spite of these seeming objections to the existence of different varieties of anemia as distinct and independent diseases, we lean to the opinion that at least many forms are entirely separate entities. We certainly take the ground held by the majority of physicians that chlorosis and pernicious anemia are widely separated from each other, and that the latter has certain peculiarities that sharply distinguish it from most other varieties.

Turning now more directly to the subject of this contribution—the pathology of pernicious anemia—only the briefest review can be given of some of the different theories that have been held. Various propositions have been advanced, which have met with no general acceptance. Among these are the claim of Klebs, Frankenhäuser, Eichhorst, and Petrone that a species of cercomonas, or that micrococci, exist in the blood. The belief of Kjellberg, that the disease is an infectious one, belongs to the same category. By far the majority of writers, however, have for years regarded pernicious anemia as a cytogenic disorder, a disturbance of the production of red blood-cells. Wood, in 1871, described the red condition of the marrow of the long bones, and Pepper thought that this might be the starting-point of the disease; while Cohnheim, a year later, was inclined to view this condition as the specific cause. According to this theory, the disease is a medullary anemia, or, as some have called it, a medullary form of Hodgkin's disease. The probability of the truth of this seemed great, since in cases of pernicious anemia no important post-mortem

[1] Read at the meeting of the Association of American Physicians in Washington, D. C., September 24, 1891.

anatomical changes could be found, except the hyperplastic alteration of the bone-marrow. Later, however, doubt began to arise as to whether the medullary changes had any etiological connection with the disease. Cases of pernicious anemia were described in which no such alteration existed, and Neumann, Litten and Orth, and others, found that this hyperplastic change takes place in other affections as well. Thus, in animals such a red marrow may be produced by repeated bleedings. (Bizzozero, Salvioli, Litten, Orth.) Eichhorst and others entertain the belief that in pernicious anemia the condition of the bone-marrow is purely secondary, the hyperplasia being only the evidence of the effort on the part of the hemogenetic bone-marrow to supply by excessive production the great lack of corpuscles in the circulation. Mott echoes the same sentiment.

Still another view has been maintained by several writers (Russell, Henry, Mackenzie, Purser), somewhat of a modification of that of the cytogenic nature of the disease. It is that the affection is an altered and imperfect, rather than insufficient, cytogenesis, by virtue of which the red blood-cells are so badly made that they break down very easily. Russell is perhaps the strongest supporter of this view, and reports a number of observations opposed to the theory (presently to be discussed) of the purely hemolytic nature of the disorder.

In this connection it may be stated that the alteration in shape of the corpuscles seen in pernicious anemia is not at all characteristic of the disease. We have seen this alteration well marked in cases of extreme anemia of other nature. The increase in the size of the corpuscles, and the occurrence of nucleated red blood-cells in the marrow and blood, are also very probably of a secondary nature, since they are not confined to this disease alone.

It would seem, then, that there is no change of the blood itself, or of the cytogenic tissues, that justifies the assumption that pernicious anemia is a cytogenic disorder. At any rate, it is not proved that there is any disturbance of blood-formation, and, by the laws of logic, the burden of proof rests upon those who assume that such a disturbance exists.

Omitting for the time the discussion of the published views that would ascribe at least some cases to the presence of bothriocephalus latus, or to atrophy of the gastric mucous membrane, we must, then, take up the consideration of the affection as one of a hemolytic nature. This theory has been brought into prominence by the able researches of Hunter, though his investigations were not the first upon the subject. Quincke, in 1876, in three cases of pernicious anemia, found a great increase in the amount of iron in the liver, and in 1877 Rosenstein confirmed this observation. Later, as a result of their studies, Quincke and Peters concluded that this increase is a constant and characteristic feature. Peters found that the increase might occur to a varying degree in other disorders. He attributed it, as did Quincke, to an excessive destruction of red blood-cells. Stahel, too, in a case of pernicious anemia, found a very great increase in the amount of iron in the liver, but none in the spleen.

These investigations seemed to be almost forgotten and their bearing not appreciated, until Hunter published his observations, which are too fresh in the minds of all to allow of more than the briefest reference. Hunter examined the viscera in a number of cases of pernicious anemia, and found a remarkable deposition of iron-pigment in the livers of all of them. The iron existed in a granular form within certain of the hepatic cells, viz., those of the outer and middle zones. In certain other diseases, as in cirrhosis of the liver, malaria, and chronic venous congestion, at times he found an increased amount of iron, but never to such a degree, and never exhibiting the peculiar arrangement that he regards as characteristic of pernicious anemia. He regarded the granular matter as a decomposed hemoglobin, since hemoglobin itself will not answer to the reactions for iron that he employed, and which will presently be described.

In some cases he was able to discover the same pigment in the cells of the renal convoluted tubules. He found no increase of iron in the spleen in any of his cases. He explains this on the ground that, though the hemoglobin is set free in the spleen or between it and the liver, it remains hemoglobin until it reaches the latter, and consequently gives no characteristic reaction for iron. The urine of his patients was of a dark color, due to the presence of a large amount of pathological urobilin, which is probably a still further alteration of hemoglobin, through the medium, however, of the bile-pigments. In one carefully-observed case the urine contained an increased amount of iron, together with two ptomaïnes, never produced except by the action of certain microörganisms.

He concludes, therefore, that pernicious anemia is the result of an excessive destruction of blood in the portal circulation, and that this destruction is due to the absorption from the alimentary tract of certain ptomaïnes produced, perhaps, by the action of microörganisms.

By a series of experiments upon animals he endeavored to produce artificially in them the symptoms and pathological appearances of the disease. For this purpose he introduced into the circulation various hemolytic substances; but found that though some of them were capable of producing hemoglobinuria, one, toluylendiamine, by its special action upon the blood and the liver, was efficient in producing a con-

dition of this organ identical with that seen in cases of pernicious anemia.

Other observers have since maintained the hemolytic nature of pernicious anemia, corroborating the statements made regarding the condition of the liver found post-mortem in this disease. It is true that, among these, Russell, while admitting the excessive hemolysis that takes place in the disease, believes, as we have said, that this depends upon a defective hemogenesis, and claims, from his study of the liver and spleen in forty-four cases of other disorders, that the excessive iron-reaction is not found in pernicious anemia alone. He has found an increase in the amount of iron in the spleen also in one case of pernicious anemia, as well as in a number of cases of other disorders. Mott seems to incline to the view that the disease depends upon the formation of some poison or ferment connected with microörganisms. In one case he found no iron in the spleen, though in another a deposition of pigment was observed.

Our own observations have little or nothing new to offer, and are of value only in so far as they may confirm or oppose the meager data as yet obtainable toward a more perfect understanding of this still very obscure subject. They have been confined, for the most part, to the question of the presence or absence of iron in the liver in pernicious anemia and in other diseases, particularly forms of anemia. We have also in progress a series of experiments upon animals; but, as they are not yet completed, the results will be reserved for future publication.

The reagents that we have employed have been those recommended by Hunter, Peters, and others. Sections of liver from specimens hardened in alcohol were, after washing in water, immersed for from five to fifteen minutes in a rather strong aqueous solution of potassium ferrocyanide; then, without washing, these were placed for an equal time in a weak aqueous solution of hydrochloric acid. The altered blood-pigment characteristic of pernicious anemia contains iron in a form that, treated in this way, develops the well-known Prussian-blue reaction, and becomes visible as granular matter of a blue color within the hepatic cells. The sections can now be passed through the necessary steps preparatory to preservation in balsam. The iron may also be rendered visible by immersing the sections in a freshly prepared solution of ammonium sulphide, by which means the sulphide of iron will be produced, and will appear as a heavy, black precipitate within the cells. We have, for the most part, used the treatment with potassium ferrocyanide.

The livers from three cases of pernicious anemia have been studied: the first from a patient of Dr. Morris J. Lewis, the second from a case occurring in the hospital of the University of Pennsylvania, and the third from a patient of Dr. J. H. Musser. It is sufficient here to say that examinations of the blood were made in all of them, and that, in this as in other respects, the symptoms were those characteristic of the disease. We shall confine ourselves to the condition of the liver with regard to the presence of iron.

CASE I.—The hepatic cells of the outer and middle zones of the lobules were very full of iron-pigment, the amount constantly diminishing in the inner zone as the central vein was approached, so that in the greater number of the cells of this zone there was no appreciable amount of iron present. The iron was in the form of minute, irregularly-shaped granules. These, closely aggregated, seemed to form a continuous band running along the center of the irregular bands of hepatic cells. No pigment could be found in the capillary bloodvessels or bile-ducts. Besides the iron-pigment, a granular blood-pigment of a yellow color, such as is frequently visible in sections of liver, was discernible in parts of the sections, chiefly in the region nearest the central vein. The wall of the central vein was stained a blue-green color in the specimens treated with ferrocyanide, but no granular matter could be detected in it.

CASE II.—The appearance of the liver was almost identical with that of the preceding case. In this case, too, there was noticeable the presence of a considerable amount of yellow pigment, chiefly in the inner zone of the lobule, and which was not affected by the potassium ferrocyanide.

CASE III.—The condition of the blue-stained pigment in this case was almost identical with that in the preceding cases, though perhaps the amount was not so great.

The spleen was examined in the first case, and found to contain no increase in the amount of iron. The kidney in the first case exhibited a slight deposit of iron-pigment in the cells of the convoluted tubules. In the second case no such deposit could be found.

As check observations upon these, we have examined livers from a large number of cases of different diseases, making an especial effort to obtain preparations from patients affected by some disease attended with anemia. It would unnecessarily occupy time to detail the results of these investigations. It is sufficient in general to say that in not a single instance was the characteristic pigment found in amount at all comparable with that seen in pernicious anemia, nor did it present the characteristic arrangement. In most cases it was either entirely absent, or present in very small quantity. It is naturally to be expected that at least a small amount of pigment would normally be found in the liver, if, as supposed, this organ is the normal seat of blood destruction.

A few of the cases deserve a somewhat fuller reference.

1. In a case of cancer of the liver in which the connective tissue greatly preponderated, large masses of yellowish pigment were observed in carmine preparations. These were irregularly scattered throughout the sections, either among the liver-cells or in the connective tissue of the growth. They were apparently the result of hemorrhages. Sections treated with potassium ferrocyanide exhibited these masses stained blue.

2. On the other hand, a case of emphysema, with dilated heart, exhibited, as might be expected, considerable yellowish pigment, situated chiefly in the cells about the central vein. When treated with potassium ferrocyanide no iron reaction whatever was discoverable.

3. Another very interesting specimen was from a case of pernicious malaria, which had been under the care of Dr. George Dock, then of Galveston, Texas. The patient had presented evidences of excessive hemolysis occurring in the general circulation, as shown by the presence of hematuria, and probably of hemoglobinuria as well. The number of red blood-corpuscles was greatly diminished, and toward the end of life leucocytosis developed. The sections of liver in this case exhibited a large amount of deep-black granular pigment, the histological arrangement of which we shall not enter upon, further than to say that no such distribution was present as in cases of pernicious anemia. Sections of liver treated with potassium ferrocyanide exhibited a considerable amount of iron-pigment in the hepatic cells. The black pigment was entirely unaffected by the reagent.

Other cases might be cited in further illustration of the point we wish to emphasize, viz., that various sorts of pigment may occur in the liver, only some of which give the ferric reaction. The black pigment of the third case gave no such reaction. In each of the first two cases a yellowish pigment was visible in carmine preparations. When treated with the ferrocyanide this became blue in the first case, but was unaffected in the second. As a rule, the yellow pigment, seen so often in livers, does not react to the ferric test. In two of the cases of pernicious anemia reported, this pigment was present in the inner zone, and the blue iron-pigment in the outer and middle zones.

This variation in the nature of the pigments is in accord with the results of the researches of Neumann, who has shown that there are two forms of pigment in the body; the one, which he denominates "hemosiderin," giving an iron reaction, and the other without such reaction.

4. In connection with the last case, in which hemolysis occurred in the systemic circulation, sections from the liver of a case of Dr. B. C. Hirst's were of extreme interest. This was an instance of infectious hemoglobinemia of the newly born (often, though we think unfairly, called Winckel's disease). In this instance the liver exhibited no iron at all. The kidney exhibited a decided blue-green tinting of the convoluted tubules, and in some parts of the loops of Henle, though the Malpighian tufts and the collecting tubules were almost entirely free from it. Nowhere, however, was there any evidence of any actual deposition of granular pigment, even when high amplification was employed.

We have already stated that a deposition of granules was present in the kidney of the first case of pernicious anemia reported.

It would therefore appear from the third and fourth cases, the first of which was probably an instance of hemoglobinemia, and the second certainly so, that hemoglobin set free in the systemic circulation is not deposited in an altered form in the liver nor reaches the kidney in such a condition that it is found there in a characteristic granular form. On the other hand, in pernicious anemia hemoglobin set free in the portal circulation does become altered in a peculiar way in or before reaching the liver, so that it is either deposited there, or, if in too great excess to be disposed of entirely there, passes into the systemic circulation in such a changed form that it is not excreted by the kidney as hemoglobin, but as some other substance (pathological urobilin), while some of it is deposited in the renal cells in a chemical form similar to the granular matter in the liver. The reason for this difference between systemic and portal hemoglobinemia does not seem clear, nor can we explain why the spleen occasionally contains pigment in pernicious anemia and at other times not.

Besides conditions in which hemoglobinemia occurs, those disorders commonly ranked as "diseases of the blood" were of especial interest to us, particularly in view of the claims that have been advanced that they were closely allied to pernicious anemia, if not, indeed, capable of being transformed into it.

5. Sections of the liver from a typical case of lymphatic anemia were treated with potassium ferrocyanide. The lymphatic tissue present was entirely free from iron, as were also the hepatic cells, except those upon the extreme periphery of the lobules. Here a circle scarcely wider than the diameter of one or two cells exhibited a decided deposit of iron-pigment, though not at all comparable in amount to that seen in pernicious anemia.

6. Sections of the liver from a case of leukemia were entirely free from iron.

It appears therefore that there is no likeness between pernicious anemia and at least two of the cytogenic anemias.

7. Another interesting case exhibiting a marked increase of the amount of iron in the liver was a very unusual one of complicated ulcerative endocarditis, in which during the life of the patient there had been reason to believe that abnormal destruc-

tion of blood had been in process in the general circulation. Nevertheless the pigment was deposited in irregular foci entirely without reference to the structure of the lobules. The amount of iron by no means equalled that in the specimens from pernicious anemia.

Livers were examined from several cases of Bright's disease and of phthisis and no iron found. The liver also from a case of cancer of several of the abdominal viscera, in which the anemia and cachexia had been exceedingly well marked during life, failed to exhibit any iron. A case of anthrax and one of gumma of the liver were without iron.

Besides livers from persons not anemic, we have thus examined the organ in a number of varieties of anemia, viz., hemolytic anemia (pernicious anemia, pernicious malaria, infectious hemoglobinemia); anemia from loss of albumin (Bright's disease); anemia of malnutrition (cancer, phthisis); leukemia; lymphatic anemia. In no instance was iron found in the liver to the extent or with the characteristic distribution seen by us and reported by others in cases of pernicious anemia.

CONCLUSIONS.—Is it justifiable to consider pernicious anemia a distinct disease, and if so, what is its nature? Our experience seems to corroborate the view that there is in this disorder a deposition of iron in the liver unlike that observed in any other, and that—as a deduction from this and certain other conditions found — pernicious anemia is a form of hemolysis. It is therefore a non-cytogenic anemia. Whether there exists any defect in the formation of the corpuscles that predisposes to their destruction when the proper destructive agents are brought to bear, it is as yet impossible to determine. There seems to us no good reason for this assumption.

In one light it might be claimed that the disease, broadly considered, need not be a unity—that is to say, there is no reason why but a single poison should produce the characteristic destruction of blood. For example, a condition closely resembling pernicious anemia in the pathological changes may be produced in animals, as Hunter has shown, by the administration of certain hemolytic agents, such as toluylendiamine. This artificial disease is in one sense, in fact, a pernicious anemia. Pyrodin, also, has produced extreme anemia in man, as was shown by the case of Renvers, in which the number of red blood-cells per cubic millimeter fell in three days from 4,000,000 to 2,800,000.

The cases of pernicious anemia reported as cured by the expulsion of tapeworms probably owed their symptoms to the absorption from the intestine of some poisonous product produced by the worm. Had the patients died, it is at least possible that an increase of iron in the liver would have been found, particularly as the poison absorbed would have been acting within the portal circulation. These, too, might in a wide sense be called instances of pernicious anemia. Again, the cases of what seemed to be pernicious anemia due to atrophy of the gastric mucous membrane were probably the result of the absorption of some product of the decomposition of food in the stomach, since dilatation of the stomach, with the consequent putrefactive changes, is a characteristic symptom of atrophy of the gastric mucous lining. The anemia is certainly not one of inanition. A very analogous condition is that reported by H. Meyer, in which the most characteristic symptoms of pernicious anemia were promptly relieved by a single washing of the stomach, doubtless thereby removing some poisonous product of decomposition which was being absorbed and was destroying the blood-corpuscles.

As we have said, all these varying conditions might be considered instances of pernicious anemia taken in a broad sense of the term. Are we then to consider this disease as not having an individual existence on the ground that it may have these various causes? Should it possibly be looked upon as a symptomatic condition of these different affections? We think not. The fact of the existence of tapeworm or of gastrectasia with consequent fermentation or of other conditions *without* the symptoms of pernicious anemia, indicates that its peculiar complex of symptoms is not a necessary sequence to their existence. Pernicious anemia is rather to be looked upon as a distinct disease which may arise whenever some certain poison is present and is absorbed. When its symptoms are present in connection with the occurrence of tapeworm or other of the diseases referred to, it is to be regared as a *superadded* but distinct disease. In like manner, an apparent change of chlorosis into pernicious anemia would be no proof of the relationship of the two. There is no reason whatever why there should not be rarely engrafted upon chlorosis, or upon any other blood-affection, or in fact upon any disease whatever, a new condition, a distinct disease, which may chance to be a destruction of red blood-cells. This is very different from the view that has been expressed that pernicious anemia is a final stage of any other form of anemia.

Regarding chlorosis, we are believers in the distinctive character of the affection, and view it as in all probability of cytogenic origin—a fault in the proper formation of red blood-cells—as a result of which there is a deficiency in the amount of hemoglobin present. As there is no evidence of destruction of blood in chlorosis, one is almost forced to the conclusion that it is a disturbance of hemogenesis, whatever the cause of this disturbance may be.

If one wishes to refuse to pernicious anemia the

title of an independent disease because there may be more than one toxic agent that can act in exactly the same manner and produce similar symptoms, no absolute objection can be made. The disease is secondary in so far as it is hemolytic. In addition to the absorption of certain ptomaïnes, it is probable, and reasonable too, that pyrodin and certain other antipyretics, and possibly also other drugs capable of destroying blood, would produce the characteristic symptoms and post-mortem changes, should their action be continuously exerted for some time. It seems better, however, to regard all these cases, including the anemia seen in atrophy of the gastric tubules and accompanying bothriocephalus latus, as other and different forms of hemolytic anemia.

It would then be a just conclusion to regard pernicious anemia, in the ordinary sense of the term, as a truly independent affection, which may be defined as an extreme and increasing anemia, without marked loss of flesh, not directly secondary to any anatomical lesion or to the presence of any parasite, but probably due to the entrance into the portal circulation from the intestine of some certain hemolytic agent, the origin of which is unknown, but that is possibly of the nature of a ptomaïne.

A PLEA FOR THE ASSOCIATED CULTIVATION OF SPECIAL EXPERTNESS IN MEDICINE.[1]

BY G. BETTON MASSEY, M.D.,
INSTRUCTOR IN ELECTRO-GYNECOLOGY IN THE PHILADELPHIA POLYCLINIC; PHYSICIAN TO THE HOWARD HOSPITAL, TO THE DISPENSARY FOR WOMEN, ETC.

GENTLEMEN: It is with much pleasure that I pronounce the American Electro-therapeutic Association an accomplished fact. Organized amidst many expressions of doubt on the part of occasional workers in electro-therapeutics, it has already met with a reception that insures a career of active usefulness in the near future, and has enrolled a membership with which it is an honor to be associated. It is of this infant organization that I wish to speak to you, of its reason for being, and of its responsibilities, as an illustration of an important means of advancing the sum of human happiness by exalting the skill of practical workers in a certain field of medicine.

Among the special societies of the day none occupies the peculiar position of an electro-therapeutic association. None other is devoted to the study of a single therapeutic agent, or has a membership embracing workers in so considerable a number of specialties. Narrow in one sense, it is in another sense nearly as broad as medicine itself, since there are but few departments of medical work unrepresented in our present program.

But such an association as this differs in a more important particular from other special societies. Whilst, like them, composed of students of a certain subject, the members of this Association are not exclusively devoted to the questions to be considered here. They are rather a company of special workers in diverse departments, seeking greater expertness in the administration of a certain therapeutic force. That the progress of the healing art as a whole has made it incumbent on certain of its practitioners to devote special study to this one therapeutic force, is a sign that medical art is partaking fully in the general advance of science, which demands the services of experts in every field. At the very inception of this Association I therefore wish to lay stress upon a proper idea of its reason for existence. Let no one suppose that we are here to uphold or study any exclusive system of treating disease. We are here merely as experts and students desiring greater knowledge of a favorite art, and I trust that you will debar from membership any person who does not give adherence to medical knowledge as a whole, and make proper use of any and all agencies of value in the cure of the sick.

A necessity of the times, as evidenced in recent changes in medical education, is the enforcement of a broader culture among physicians. There is no doubt that this will tend to increase the membership of special scientific associations, but it must not be forgotten that these organizations themselves arise from a more peremptory assertion of the natural law of supply and demand. There is always a vast difference between the merely cultured man and the expert: the one delights us, but to the other we turn for the advancement of human knowledge and for real help in the crises of life. As the community increases in intelligence this seeking after experts will doubtless become more pronounced in all departments of human service of man to man above the mechanical work of the common laborer, and we may well conclude that the healing art will partake fully of the benefits of this natural selection. A demand for experts creates a demand for expert training, an educational thoroughness that is at present well known to be impossible in our medical colleges. To meet this emergency there have, fortunately, grown up of late two agencies: the one, the post-graduate college, to teach ordinary skill; the other, the special society, which bears to yet unconquered disease the relation of a well-disciplined army to the borders of a hostile and unexplored country. Thoughtless men neglect both, but the wise see in such agencies the means of advancing personal knowledge of the practical needs of their work. It is to be hoped that their establishment

[1] Being the Presidential Address delivered at the first annual meeting of the American Electro-therapeutic Association, held in Philadelphia, September 24, 25, and 26, 1891.

will quicken an evolutionary process in our profession that will finally develop it into an ideal organization of skilled interdependent workers; where each member, profoundly cultured in the universal sciences of medicine, will yet confine his work to that branch in which he is skilled. Such a specialism in parts and members is Nature's ever-present pattern for our admonition and imitation. When such a time has arrived, the fortunate objects of our professional care will receive that highest skill to which they are in justice entitled, and which at the present moment they rarely receive.

In this hoped-for Utopia of professional conscientiousness, skilfulness, and modesty, I am sure it will be impossible to duplicate the position of a recent correspondent, whose apparently careful and exhaustive article on the electrical treatment of uterine fibroids in a recent journal led me to request him to discuss the subject at this meeting. He replied that he knew almost nothing about electro-therapeutics—a fact that I had already suspected. So remarkable an admission of ignorance from a person assuming the position of trying and judging, causes one to wonder if he had been equally frank with the thirty or forty patients mentioned in the paper before undertaking their treatment. Well might we beg a modern addition to the ancient Hippocratic oath—in which the medical man swore not to "cut for stone"—an addition that would compel the non-expert to forever refrain from assuming responsibilities for which his training has been insufficient, and that would have rendered impossible that recent crop of jacks-of-all-trades who have "tried electricity." Of all the enemies of scientific research in electro-therapeutics, these are the worst. Not even the pure quacks do the harm of these Pharisees, who, when their patients demand it, blunderingly attempt to use a remedy in private, and publicly condemn it on the strength of such evidence. Such mistaken attempts at medical omnipotence should be frowned upon as savoring of a crime toward both the patient and the remedy.

The organization of a national Electro-therapeutic Association crowns the full emancipation of this remedy from the thraldom of quackery. Neglected by the profession in the years that elapsed between the memorable medical experiments of Franklin in this city and the discovery of the dynamo, the marvellous triumphs of electrical engineers have at last aroused medical men to the need of discarding ideas, methods, and appliances that preceded the electrical new-world discovered some fifteen years ago. The assumption of new methods in electro-therapy has been extremely slow as compared with the industrial revolution that has already altered the face of civilized communities, but it is to be hoped that this body will be a powerful stimulus to the spread of scientific work in America.

Science, however, is but another name for truth, and in touching upon the objects of an Association for the study of a force so well harnessed by natural law as electricity, it is evident that in our discussions truth must ever be held as paramount. Armed with laws that unlock the hidden power of this force over certain diseases, we are also equipped to demonstrate its utter uselessness in others by the application of an agnosticism that refuses to believe anything unless proven. But in clearing away the rubbish of unproved statements that make up so much of our archaic electro-therapeutic literature, we shall by no means weed out the entire field of so-called medical empiricism. It is not alone in electro-therapy that the careless dicta of professional book-writers have told us that such and such an agent is good for such and such a disease, without specifying the conditions that in actual practice are necessary to save us from failure. Read any classical work on general therapeutics that is ten years old, and see the blind empiricism from which all therapeutics has been evolved. There should be no nobler work for this Association than sifting the ancient claims for electricity, particularly in certain diseases of the nervous system, and establishing either their falsity or the conditions under which they are true. All remedial agencies are environed with limitations that vary with the dose used, the condition of the patient, etc., and this is particularly true of the one under consideration, which, in turn, may be a calmant, a stimulant, an absorbent, a solvent, and a destructive agent. Here a hundred possible variations must be scanned to get the possible road to success, and hence this society is an eminently technical one. The broad question of the value of electricity in a certain disease should be subordinated here to exact data of the kind of current used, the dose, the duration and frequency of treatment, and the nature and position of the electrodes. All these should be specified before a claim is made that this agent is worthless in a given disease, since a different combination of the same factors and conditions might have led to success. Similarly, the conditions giving rise to the successful treatment of a disease should be specified with equal minuteness in order that others may find it possible to verify and duplicate our results.

It is for such work that the American Electro-therapeutic Association is needed, and badly needed. I do not decry the presentation of electrical papers to our various general and special societies, but it is in the nature of such presentations that they must assume the polemical attitude of enthusiastic indorsement or wholesale condemnation of general facts—must deal in glittering gener-

alities—in order to be other than tedious to their audiences. Such papers do little to advance our knowledge of a special subject, and the speakers that follow are rarely capable of intelligently discussing those whys and wherefores of success and failure that I trust you will at these meetings bring into prominence.

Among the questions that demand this critical investigation may be mentioned the whole subject of the use of electricity in organic nervous diseases and in the neuroses. We are here handicapped, of course, by a still imperfect knowledge of many pathological conditions underlying these diseases, yet I think it is even now possible to make a broad division of the electro-therapeutics of nervous diseases into two groups, the one acting by transferred physiological processes through the agency of the spinal and sympathetic systems, and the other acting by virtue of a direct passage of lines of flow through—or by a polarization of—the primary or secondary seats of the disease. The indirect method is, unfortunately, the more common, since we are restricted to it frequently by the deep situation of the diseased areas, and in its various applications we are limited in progress by the limitations of these physiological carriers of our remedy. We are here in much the same position as in prescribing drugs, whose action is generally limited by the circuitous routes of absorption and circulation. It is doubtless in the method of direct action that electricity will yet make its greatest advances in the treatment of nervous diseases: a method that involves the possibility of concentrating a sufficient density of lines of force through a diseased area to accomplish an alteration in its nutritive condition. This is yet an almost virgin field in neurology, depending somewhat upon improved methods of conducting efficient currents through the dermic surface; and, in estimating the possible future value of strong currents thus scientifically conducted to the actual seats of disease, I can conceive of but one organic basis of disease as absolutely and at all times unpromising and resistant, namely, that due to living germs.

Of the work before you in considering the value of electricity in gynecology I need not speak at length. This is regarded as a most important question in every gynecological society in the world, and while we are fully justified in considering its relative value as compared with other means, we shall have a greater opportunity to discuss the many technical questions that belong to the subject. Here, indeed, is material alone sufficient for a society. The exact methods used by men of large experience in the various diseases of women are living questions that come home with force to anyone who essays this work. Such things are rarely well shown in books because of the changing extent of our yet imperfect knowledge. Owing to the many possibilities of direct treatment in gynecology we have, nevertheless, already accumulated a most respectable series of exact therapeutic facts, with many useful rules deducible from them, and in the great activity now characterizing this branch of electro-therapeutics an almost daily advance in our knowledge is inevitable. It is in this department of diseases of women that electricity as a remedy has encountered its first real and bitter opposition from non-users in the profession, but we should remember that here its greatest value as a curative agent is becoming conspicuous, for "the blood of martyrs is the seed of the faith." To its good work of restoring health and function by combating disease processes has been added the labor of combating unwise surgery, which, in a laudable effort to perfect a useful technique, has sacrificed thousands of patients and parts of patients on the altar of harsh experiment.

Among other branches of the work great interest attaches also to the electro-therapeutics of visceral and circulatory diseases; of dermatology; of strictured canals and orifices; and of the naso-pharynx. Each of these questions will be infinitely better understood when discussed by experts, and cannot fail to be placed on a higher plane of scientific exactitude by each one of our annual gatherings.

As important accessories to these advancements in our ability to cure and control disease, certain questions of detail common to all this work demand our attention. This Association should take action on the important matter of securing a uniform and reliable calibration of our milliampère-meters. Many of the instruments supplied to the profession are improperly graduated, and others soon fail to read correctly through imperfect construction. This is surely a matter of greater importance than the correctness of the scales used in trade, over which the State wisely maintains a supervision. In the absence of government assistance in verifying our instruments some practicable substitute should be devised. Our faradic batteries are also yet far from perfect, besides being devoid of intelligent means of graduation, and I trust that you will take early steps to bring this somewhat old-fashioned instrument up to the high character demanded by modern work.

Such, in briefest language, are some of the reasons why special workers should meet in occasional conclave. To sufferers from the affections coming under our care this meeting is fraught with high consequences. Unless we can go back to them with an added power over disease our coming here is bereft of its highest value, for in the presence of human suffering we can recognize utility alone as our measure of results.

SYPHILITIC SPONDYLITIS IN CHILDREN.[1]

By JOHN RIDLON, M.D.,
OF NEW YORK.

ON October 15, 1886, before the Section on Orthopedic Surgery of the New York Academy of Medicine, I read a paper entitled "Syphilitic Joint-disease in Children," and exhibited patients with the disease located at the ankle, knee, hip, wrist, and finger-joints, and in the spine. All cases had been treated by immobilization, and each case had been experimentally observed for varying periods with and without anti-syphilitic medication until the diagnosis had appeared to me to be conclusive, when each was finally placed upon the treatment that was continued until its final cure.

Notwithstanding the fact that these cases differed somewhat in their clinical aspects from ordinary tuberculous disease when located in the various joints; that nearly all gave a clear history of syphilis in the parents, and at some time in their course had presented other well-recognized syphilitic lesions; that while under the anti-syphilitic medication all had shown marked improvement, which they had failed to show under immobilization alone—notwithstanding these things, no one of the orthopedic surgeons present was willing to admit that the joint-lesions presented were syphilitic, but insisted that they were all of the ordinary tuberculous variety. One eminent man went so far as to say that in his extended experience in the treatment of chronic joint-disease he had frequently observed the curative effects of mercury upon tuberculosis. Indeed, so unanimous and positive was the opinion among my colleagues that there was no such thing as syphilitic joint-disease that I had not the temerity to publish my paper. However, five more years of observation have not only confirmed the views that I then held, but I have been led to believe that syphilitic joint-disease is of much more frequent occurrence than I then supposed, and I have ventured once more to bring forward a portion of the subject for consideration.

All of my observations have been among children in whom there was no evidence of a primary syphilitic lesion, and in very many I have sooner or later been able to trace a syphilitic taint in one or both parents; on this alone I have felt justified in assuming that the disease was inherited. It should be known that no microscopic examination has been made by me to demonstrate the presence of the syphilitic bacillus or the absence of the tubercle bacillus, and that I do not profess to know what relation exists between tuberculosis and syphilis in the second and third generation. Clinically, however, there can be no doubt of their relation. Ricord and Maisonneuve taught that syphilis, especially in the tertiary form, could be transmitted to the offspring as scrofula, phthisis, and rhachitis; and Bumstead and Taylor (*Venereal Diseases*, fourth revised edition, p. 735) say: "Syphilis is generally transmitted only to the second generation; exceptionally, in case of excessive activity of the disease in the first inheritor, it may appear in the third generation."

The diagnosis of syphilitic joint-disease in a child does not necessarily imply an accusation of one or both parents, for, if "one-third of all children procreated of syphilitic parents are dead-born, and of those born living 24 per cent. die within the first six months of life," and if "in case of infection of both parents the disease is likely to be transmitted in an extreme form, resulting in death of the fetus, or in the early manifestation of symptoms," it would not be unfair to conclude that some cases of syphilitic joint-disease in children that appear as late as from the tenth to the fifteenth year, like some other syphilitic symptoms, may have been transmitted from the original sin of a grandparent, the parent having escaped, or at least having never been conscious of any syphilitic manifestation. Bearing upon this, let me again quote from Bumstead and Taylor: "These cases of late development are rather rare, although we have seen fully two dozen in which there were such lesions at the third, sixth, eighth, twelfth, fifteenth and twentieth years. . . . . Besides the cutaneous and visceral lesions of the first year or two, other syphilitic affections are frequently observed. In many cases the diaphyso-epiphyseal lesions of the bones appear during uterine life, and run their course in the early months of the disease, possibly relapsing at a later period; or they may appear for the first time during the first year of life. From the fourth up to the twentieth year the shafts of the bones may be affected by periostitis, and joint-affections often occur. . . . . Dactylitis is usually observed in very young children; it may also occur as late as the twentieth year." Notwithstanding this teaching, and that of numerous English, French and German observers, syphilitic joint-disease in children has no place in the orthopedic literature of this country.

One gentleman, who had the opportunity of examining all of the patients reported upon in my former paper, said that he did not consider any of them as cases of syphilitic joint-disease, but as "tubercular joint-disease modified by inherited syphilis." It has seemed to me that it would be a more correct expression of the condition, provided the tubercle bacillus can be demonstrated to be present in these lesions, to call them syphilitic joint-disease modified by tuberculous infection. It

[1] Read before the American Orthopedic Association, at Washington, D. C., September 24, 1891.

is well recognized that traumatic joint-affections, if neglected in treatment and prolonged by use, readily become infected with the tubercle bacillus; and it may not be an unfair assumption to claim that the bone and joint-lesions due to syphilis in the progenitors, when neglected or refused remedial medication, also readily become the seat of tuberculous infection. The symptoms, prognosis, and treatment of these cases are quite different from the cases primarily traumatic or tubercular.

The following case, which is not an imaginary one, is instructive:

A young child, of a clean mother, but whose father at the time of the conception was suffering from tertiary syphilis, developed chronic disease of a joint; he was treated with anti-syphilitic remedies and kept in bed, but without mechanical restraint, and recovered after a few months, with a joint normal in all its appearances and functions. Subsequently he developed a chronic disease in another joint, which presently exhibited the same symptoms and signs that had been observed in the former joint-affection. He was now subjected to mechanical treatment without medication. An abscess appeared and was allowed to open spontaneously. Once or twice a fortnight this sinus was exposed for some time in a room crowded with patients suffering from tuberculous lesions; it was washed with water from a dirty tin basin that had been used for years by hundreds of patients for washing away the discharge from tuberculous sinuses, and it was then dressed with a pad of common oakum taken from an open box, in which it had lain for months, exposed in this room daily crowded for three or four hours with patients dripping with tuberculous pus. At the end of some months of this treatment the surgeon in charge, as he afterward told me, confirmed his diagnosis of tuberculous joint-disease by finding tubercle bacilli in the discharge from this patient's sinus. The patient continued for more than two years under the most approved mechanical treatment without apparent improvement in the condition of the joint or diminution in the amount of discharge from the sinus. Then, under a comparatively short course of mercury and iodide of potash, the sinus closed and all symptoms of joint-disease disappeared—leaving behind, however, a deformed and stiff joint.

Syphilitic spondylitis differs in no way from syphilitic joint-disease located elsewhere, except as it is modified by its peculiar surroundings. In the superficial joints, where the infiltration of the soft parts and bone can be readily seen and felt, the onset of the disease is very slow, and months may pass before pain is complained of or disability becomes serious; but in the spine, where the lesion is located in and about the anterior surface of the vertebral bodies, far beyond sight and touch, the slow advance of the early symptoms escapes recognition and the onset usually appears to be comparatively rapid. On any motion the distant pain is complained of, and sometimes within a few days the patient is unable to stand without support. If located in the dorsal region, the kyphosis soon appears with a sharp angle, formed of but one or two spinous processes, and with a long sweeping curve above and below. In the lumbar region, the kyphosis is slow to appear, often not appearing until marked psoas-contraction can be made out, and perhaps not until an abscess has formed; but lordosis is an early and well-marked symptom.

When the disease is once established, it seems to follow the rule of all syphilitic lesions, and is a cumulative process rather than one of degeneration—it is a hyperplasia rather than a molecular disintegration. When a certain point has been reached, resolution takes place, or the new tissue dies and an abscess rapidly forms. If the abscess can be evacuated under favorable conditions the disease often goes on to a rapid and complete recovery. Abscesses that are not within reach will almost invariably undergo rapid resolution when, under the influence of the mercurials, the patient is once well.

If no syphilitic history can be obtained from either parent, and if it cannot reasonably be suspected, an examination of the spine alone may not be sufficient to warrant the diagnosis of syphilis. Other things must then be taken into consideration; for, although a syphilitic spine may, and no doubt does, often exist without there being or having been other syphilitic lesions, the presence of such lesions is evidence of such value that the patient should always be carefully examined.

Spondylitis in very young children, that is to say, under three years of age, and spondylitis associated with chronic disease of some other joint, or in another portion of the spine separated by a healthy area, is in my experience more often syphilitic than tuberculous. Such cases always repay a careful examination and a strict watch for the appearance of other syphilitic manifestations, namely, nasal catarrh with the formation of reddish-brown crusts, suppurating otitis, corneal opacities, interstitial keratitis, Hutchinson's teeth, periostitis, cutaneous eruptions, and sores about the anus and genitals. In my experience, the most common associated symptoms have been the bone and joint-lesions at some distant point, and the least common have been the skin-eruptions.

The treatment of syphilitic spondylitis should be both mechanical and medicinal; but the mechanical plays by far the less important part, and rest in bed or on some form of portable bed will be found to be more demanded than braces. Rest in the recumbent posture during the painful stage is absolutely essential, while the application of specially devised apparatus may be looked upon more in the light of a luxury than a necessity. The medicinal

treatment consists of mercury and iodine. Large doses should be used; if the stomach will tolerate it, as much as one-thirteth to one-twenty-fourth of a grain of the bichloride or biniodide, with from five to forty grains of potassium iodide three or four times a day. If the stomach proves irritable, mercury with chalk in from three- to five-grain doses, with inunctions of blue ointment, are advisable. Tincture of iodine in from one- to ten-drop doses may be given. It will be found that these children usually bear these medicines in as large doses and as well as do adults.

CASE OF ABSCESS OF LUNG; OPERATION; RECOVERY; REMARKS.[1]

BY FRANCIS HUBER, M.D.,
OF NEW YORK.

As a text for the remarks to follow, the history of the case is given in brief:

Benj. J., four years old, had been ill about four weeks when first seen in October, 1888. He was troubled with exacerbations of fever, irregular chills, and a distressing cough; had lost flesh and strength, growing pale and waxy in looks. The physical examination was negative, with the exception of an area of flatness, with distinct bronchial breathing in the right infra-clavicular and mammary region. Exploratory puncture brought pus, and the diagnosis of localized empyema was made. At the operation (incision with drainage) pleural adhesions were found and the pus was discovered to be in the substance of the lung. The cavity gradually contracted and a small fistula remained, which closed about ten months from the onset of the disease.

The exploring syringe readily detected pus on the day prior to the operation. Rather unwisely, the needle was removed and the incision made. When the pleura was opened, the needle was again inserted, and it was only after repeated punctures that the site of the suppurating process was rediscovered. A severe pneumonia of the upper lobe (laterally and posteriorly) resulted, no doubt caused by the multiple punctures. In another case I shall certainly leave the needle in as a guide. Gentle irrigation of the cavity or of the fistula later on was not followed by any bad effects; if forcible injections were resorted to, a severe paroxysmal cough would follow, to terminate when the injected fluid had been expectorated, the fluid having entered a bronchial tube.

Although abscesses of the lung secondary to tuberculosis, pyemia, metastatic processes, or traumatic in character, are by no means infrequent, the simple non-tuberculous and non-metastatic varieties are but rarely met with. They present themselves in one of four forms. In the first variety the symptoms are obscure and the diagnosis is only made when the abscess ruptures into a bronchus or the pus is discharged externally through the integument. In the second class the symptoms resemble those of pleurisy with effusion; in the third class, those of tuberculosis; the fourth variety is generally associated with broncho-pneumonia. The affection is at times met with in children in a debilitated condition, living under poor hygienic surroundings. Meigs and Pepper believe the trouble to be of frequent occurrence, a sequel to the third stage of pneumonia, while Gerhardt, Henoch, Eustace Smith, and others, teach the contrary. The early recognition of the disease is difficult, for the disorder is usually secondary to pneumonia; the occurrence of chills, sweating, and increased vital depression ought to put one on his guard. A sudden expectoration of pus, with the rapid formation of a cavity in a portion of the lung previously consolidated, is characteristic of the rupture of a pulmonary abscess.

Abscesses may be solitary, of greater or less size; may be multiple and disseminated, superficial or deeply seated. The smaller may coalesce to form larger abscesses. The process may run an acute course or become chronic; it may occur coincidently with the original disease or manifest itself later, the pulmonary tissue remaining consolidated, resolution not having taken place. The walls may be sharply defined or the suppurating process may gradually be lost in the normal lung-structure. Perforation may occur into a bronchus or externally through the integument; the pleura or some adjoining organ may be invaded. Or the abscess may become encysted, undergo calcification, caseous degeneration, or become infiltrated with tubercles. In some cases the entire lung has been destroyed and converted into a large abscess-cavity.

The physical signs are not characteristic; before rupture occurs the parts are consolidated. A sudden more or less copious expectoration of pus in the progress of a pneumonia is due to the bursting of a pulmonary abscess. We now get the physical signs of a cavity in a portion of the lung previously infiltrated.

As to differential diagnosis: In gangrene the odor of the breath is fetid, the expectoration being green, fetid, and penetrating. Localized empyema may be excluded by the absence of a history of former pleurisies. In empyema discharging through the lung, the quantity of pus expectorated is large and the physical signs reveal fluid in the pleural sac. When hepatic abscesses discharge through the bronchi, the expectoration is copious, dirty-brown, and paroxysmal. In doubtful cases of tuberculous character, the presence of tubercle bacilli will establish the diagnosis.

Treatment is symptomatic, and consists in the use of stimulants, tonics, and antiseptic inhalations.

[1] Abstract of a paper read before the American Pediatric Society, Washington, September 23, 1891.

The exhaustion may be counteracted, and infection prevented by proper incision and drainage.

In conclusion, the rules enunciated by Drs. Spillman and Haushalter are presented for our guidance:

1. Before operation, the position of the abscess must be determined as accurately as possible, and especially by exploratory puncture.

2. As a rule, a pulmonary abscess should not be opened during the course of an acute pneumonia.

3. Before the abscess is opened, it is well to excite pleuritic adhesions, if these do not already exist. This should be done by resection of a rib and suture of the two pleural surfaces, or by means of the actual cautery.

4. The abscess is best reached by resecting a rib and piercing the lung with a thermo-cautery.

5. Free drainage is essential; antiseptic injections are best avoided, dry dressings being preferable.

CLINICAL MEMORANDUM.

GUNSHOT WOUND OF THE LEFT CUNEUS, WITH RIGHT HOMONYMOUS HEMIANOPSIA.[1]

BY J. T. ESKRIDGE, M.D.,
OF DENVER, COL.

E. A., a well-developed colored man, was shot in the left occipital region of the head in the latter part of May, 1890. From the measurements taken on the scalp, the ball, of thirty-eight caliber, entered the brain two and a half inches anterior to the occipital protuberance and half an inch to the left of the median line. The ball was extracted a few hours after the infliction of the wound, by enlarging the opening in the bone. The ball was found about half an inch below the cortical substance of the brain. The man was considerably depressed by the shock, but apparently did well for two or three days subsequent to the operation. I examined him on the second day after the ball was extracted. Besides a sense of prostration of which he complained, and a tendency to sleep, there was nothing in his condition to interfere with a satisfactory examination. I found no rigidity, paresis, or paralysis, of any of the muscles. The pupils were slightly dilated, but responded well to light and accommodation. There was no difficulty in moving the eyes in all directions. The plantar and patellar reflexes were very feeble, but a little more marked on the left than on the right side. The cremasteric and abdominal reflexes were abolished on the right side, and were feeble on the left. Tactile, muscular, temperature, and pressure senses, were normal. Taste, hearing, and smell seemed to be well preserved, and equal on the two sides. The acuteness of vision was not tested, but the fields were well preserved on the left side of each eye, and totally blind up to the median line on the right. The fundus of each eye appeared nearly normal, excepting a possible slight hyperemia of the papilla. His mind appeared to be dull and to act slowly; but on arousing him from his apathetic condition he answered questions fairly satisfactorily, and seemed to appreciate what was said to him. Concentrated attention could be maintained by him only for a few seconds, from a feeling of exhaustion. Temperature 100°, pulse 90, respiration 28.

The day after the examination he was more stupid, and was inclined to sleep constantly, and on the following day he was totally unconscious, with a temperature of 102°. He died on the fifth day.

The autopsy, under the direction of the coroner, was made eighteen hours after death. On removing the surgeon's dressings, not a drop of pus was found. The opening in the skull, enlarged by the trephine, was one inch in diameter, and was two inches anterior to a point opposite the occipital protuberance, and three-fourths of an inch to the left of the median line. The membranes of the brain, both the dura and the pia, were engorged with blood, but no pus was found. There was a hole in the brain-substance two inches in diameter. Posteriorly, it extended to within one and a half inches of the tip of the occipital lobe. On the median surface of the hemisphere there was a thin layer of brain-substance, apparently about one-eighth of an inch in thickness posteriorly, and from one-quarter to three-eighths, anteriorly. This was not softened or broken down anteriorly, but at its posterior portion lacked normal consistence. The destroyed brain-substance reached anteriorly a point one inch posterior to the upper end of the fissure of Rolando.

Laterally, over the convex surface of the brain, the wound reached to a point one and a half inches distant from the angular gyrus, but the white matter of the brain was softened to a point almost beneath the gyrus angularis. The cuneus was as completely destroyed as it would have been possible for an expert physiological experiment to have effected without interfering with other portions of the brain. The wound did not extend down to the tentorium cerebelli. The great ganglia and the base of the brain presented a normal appearance.

[1] Read by title at the meeting of the American Neurological Association, September 24, 1891.

CURRENT LITERATURE.

TREATMENT OF HEPATIC COLIC WITH OLIVE OIL.

VILLEMIN (*Bull. Gén. de Thérap.*, No. 14, 1891) admits that while clinically the good effects of olive oil in the treatment of hepatic colic are recognized, no explanation of the mode of action yet proposed is satisfactory.

1. *The direct action of the oil upon the calculi.* It has been said that the oil, entering the gall-bladder, softened the stones, which were then driven into the intestine by muscular contractions of the wall of the bladder. In fact, in several animals killed after a quantity of olive oil, pure or colored, proportionate to the weight of the animal, had, by means of a tube, been introduced into the stomach, Chauffeard and Dupré recovered the oil in the stomach and intestine, and never beyond the ampulla of Vater in the duodenum. Further, if a cholesterin calculus be immersed in olive oil it remains unaltered, without change in aspect or consistency.

2. *The cholagogue action of the oil.* Most clinicians

admit that it is impossible to disintegrate or dissolve biliary calculi *in situ*; by the use of cholagogue remedies and of olive oil it is hoped to accomplish the arrest of an attack of hepatic colic by hastening the descent of the stone by increasing the secretion of bile and causing its expulsion into the intestine. To ascertain whether or not the oil possessed the property of increasing the biliary secretion, numerous experiments have been performed upon animals in which biliary fistulæ had been established. Schmidt and Bidder noticed in cats fed upon a diet of fat a diminution in the quantity of bile discharged. Rosenberg, however, believing that bile is necessary for the emulsification and reabsorption of fats, thought that the ingestion of a large quantity of oil should cause an abundant secretion of bile. In dogs that received in addition to their usual nourishment about 100 grams of olive oil, he noticed at the end of thirty or forty-five minutes, sometimes only after two hours, an increase in the biliary secretion, which became considerable toward the third or fourth hour. With other cholagogues he failed to obtain effects comparable in duration or intensity to those produced by the oil. He noticed, moreover, that, under these conditions, the bile was diminished in consistency, as a result of which the precipitation of cholesterin seemed to be retarded. In the second place a more abundant flow of bile would result in a purely mechanical action. In truth, many observers attribute a preponderant role in the formation of calculi to a stagnation of the bile. It has, however, been shown that while the cholagogue action of drugs is very efficacious in preventing hepatic colic, these are without effect in arresting an attack of existing colic. In the case of the oil the atack is arrested in a few minutes, whilst the cholagogue action never follows before a half-hour.

3. *Reflex action.* There is yet the possibility of reflex action to explain the mode of action of the oil. Whatever may cause the engagement of the calculus in the cystic duct, it can descend even to the duodenum without difficulty or injury. If the stone is small it is carried off with the bile; if it is larger, it is propelled by the contractions of the muscular fibers of the duct. It has been demonstrated that attacks of hepatic colic are dependent upon reflex spasm of the walls of the gall-bladder, or of the cystic or common duct. To relieve such an attack a remedy should overcome the spasm upon which the pain depends. It is, therefore, believed, that in the first place the oil, by determining a greater fluidity and abundance of the bile, may prevent the formation of calculi, and when an attack of hepatic colic has been induced the oil may by a reflex action arrest both the spasm of the biliary passages as well as the pain occasioned by this spasm; subsequently the cholagogue action of the oil may favor the descent of the calculus into the intestine.

The mode of employment of the oil varies with the end to be accomplished. When an impending attack of hepatic colic is to be averted, the oil is best administered in the evening, at as long an interval as possible after the meal, in order not to interfere with digestion. A dose of an ounce and a half, repeated on several successive days, will generally be sufficient to abort an attack. When the oil is employed to relieve an attack of hepatic colic various methods have been pursued. The oil has been given alone, in doses of about twelve ounces, taken in two equal parts, at an interval of fifteen or thirty minutes; it is sometimes used in combination with belladonna. Five ounces of oil may be administered with half an ounce of cognac, the white of two eggs, and some menthol; or four ounces of the oil may be given five or six hours after a slight repast, and on the next day an ounce and a half of castor oil. Villemin always employs the oil in four-ounce doses, preceded and followed by a mouthful of cognac or of brandy, which the patient may swallow or use as a gargle to overcome the disagreeable taste. Notwithstanding the usual repugnance or disgust that patients manifest for the remedy, vomiting rarely follows its administration. In some cases this even removes the sense of nausea that may previously have been present. The oil at once arrests the acute pains, and shortens the period marked by dull pains, weakness, malaise and jaundice, so common after attacks of hepatic colic.

PANCREATIC DIABETES.

RENDU (*La Semaine Médicale*, March 25, 1891) has described the varieties of glycosuria. Sometimes glycosuria is transient; the urine of certain individuals, overfatigued physically and especially mentally, from time to time contains traces of sugar. Such glycosuria disappears after some days of rest and seems to have no serious significance. It is the same with the glycosuria observed in some acute conditions, as in poisoning by the vapors of charcoal. In the cases indicated, the glycosuria is probaby a result of congestion of the bulb, and is not true diabetes.

Diabetes is probably always of nervous origin. Rendu is convinced that whenever glycosuria exists, the bulb is involved. In this category belong the cases of Claude Bernard, in which the diabetes was the functional expression of a lesion of the medulla or the fourth venticle. Leudet has reported cases of basilar meningitis with glycosuria; in some cases of diabetes Luys has post-mortem found marked congestion of the floor of the fourth ventricle; in still other instances, tumors have been found in the same region.

The most important and the most frequent form of diabetes is constitutional or diathetic, of which there are two varieties: adipose or gouty, and thin or pancreatic. The diabetes of the adipose or gouty is hereditary; it may continue for years without impairing the general health. It frequently alternates or coincides with other articular or gouty manifestations, or with such conditions as external hemorrhoids, eczema, migraine, or epistaxis; the patients are also often asthmatic. Some marked differences exist between these two types of diabetes. Gouty diabetes is insidious in onset; thirst may be absent; furuncles may appear, or an existing wound cicatrizes slowly; there may be itching of the genitalia; there are flashes of heat, or there is insomnia. The quantity of urine passed during the twenty-four hours does not usually exceed five liters (five quarts) with a maximum of from thirty to forty grams (from an ounce to an ounce and a quarter) of sugar per liter; emaciation does not usually result; finally, the quantity of sugar in the urine is readily controlled by treatment. Each year after a sojourn at Vichy or at Carlsbad, the sugar com-

pletely disappears from the urine, to reappear at the end of some months. Such patients, however, may live for many years without accident, save perhaps itching or an outbreak of furuncles. They must, however, be regarded as invalids, as in them surgical or medical disorders may assume a grave character and rapidly terminate fataly. In these cases there is nearly always a psychic cause for the condition—a strong emotion, or financial loss. The nervous system seems to play an important rôle. In some cases bulbar manifestations are seen, as, *e. g.*, albuminuria or polyuria, alternating or coinciding with the glycosuria.

The manifestations of pancreatic diabetes differ from the preceding. The patients are neither diathetic nor predisposed; suddenly, without apparent cause, without prodromes, grave diabetes is evident. Polydipsia associated with polyuria develops in the midst of apparent health, and a condition of pronounced debility is soon reached. In some patients intestinal disorders, paroxysmal diarrhea, ill-defined chronic enteritis, with rapid loss of strength, usher in the disease. The stools may contain free fat. The onset may be marked by cerebral disturbances, such as vertigo, somnolence or insomnia. Premature and absolute impotence not dependent upon general paralysis or locomotor ataxia should create a suspicion of diabetes. The patellar reflex may be abolished. In addition to the excessive thirst and appetite there is an unusual sense of fatigue, at first physical and soon intellectual; the patient becomes apathetic; in some cases moral depression may be the first indication of diabetes. While in the diabetes of the gouty or adipose the quantity of urine rarely exceeds three or four liters, in pancreatic diabetes it is often much greater. The degree of azoturia is proportional to the degree of glycosuria. Trophic disorders are prominent. Lesions of the retina are observed; the teeth and hair fall out; finally, a series of digestive disorders arise that lead to rapid emaciation. Tuberculosis frequently develops.

Lesions of the pancreas were long ago observed in cases of diabetes. In five cases of nine, Frerichs has noticed atrophy of the pancreas; while the lesions described have not in all cases been identical, they have all been associated with destruction of the organ. Atrophy is frequent; a sclerotic condition, either pericanalicular or perivascular, is often found. In some instances the volume of the pancreas was normal, but the glandular element was completely altered or had disappeared. In dogs, extirpation of the pancreas has been followed by diabetes with polyuria, glycosuria, and emaciation.

It seems, then, that a pathological relation exists between the condition of the pancreas and diabetes—a relation, however, the details of which are not yet understood. It is also probable that the polyuria and glycosuria are much more common as a result of disease of the pancreas than as a result of lesions of the fourth ventricle. The prognosis of pancreatic diabetes is much less favorable than that of diabetes in the adipose or gouty. In the pancreatic form therapeutics is entirely powerless; slight amelioration may be obtained from the administration of opium, antipyrine, arsenic, lithium, or the bromides; but the glycosuria cannot be made to disappear completely. In diabetes of the adipose, medication is speedily successful.

MEDICAL PROGRESS.

Concealed Rupture of the Perineum.—At the recent congress of the British Gynecological Society, THOMPSON (*Provincial Medical Journal*, July 1, 1891) described a condition in which the vagina is lacerated in its lower portion, the rent not involving the posterior commissure. Its occurrence is announced by a peculiar sensation imparted to the hand supporting the perineum during labor. Unless immediately repaired the injury may imperil the life of the mother, from the accumulation, decomposition and absorption of lochial discharge through the lymphatics of the perineal body, which communicate directly with the peritoneum.

Treatment of Diphtheria with the Galvano-cautery.—HAGEDORN (*Deutsche medicin. Wochenschr.*, No. 28, 1891) recommends the galvano-cautery in the treatment of diphtheria of the pharynx. The disease is conceived to be at first local and microbic, the constitutional involvement being secondary. A stirrup-shaped cautery is employed and is applied as soon as the diphtheritic membrane makes its appearance. Pain is overcome by preliminary cocainization. The reaction is slight. No harm is done if the membrane should prove not to be diphtheritic. The treatment has been pursued in twenty-four cases, with but one death.

Electrostatic Treatment of Strangury.—BENEDIKT (*Wiener medizin. Presse*, July 5, 1891) reports two instances of strangury, one in a case of tabes dorsalis, the other in a feeble-minded individual, and refers to others, in which, after other measures had failed, the application of static electricity, by means of the douche and the spark to the vertebral column and to the region of the bladder above the symphysis pubis, was followed by excellent results. The relief of the symptoms referable to the bladder is in turn followed by an ability to sleep.

Paralysis of the Vocal Bands and Icterus.—In conjunction with cases already reported by Gerhardt, and suspected of belonging in the category of Weil's disease, KAPPER (*Wiener medizin. Presse*, July 5, 1891) reports two analogous cases in which, following exposure to cold, there developed malaise, headache, fever, jaundice, aphonia, dysphagia and enlargement of the liver and spleen, which gradually subsided and were followed by recovery.

Sarcinæ in the Urine.—FINLAYSON (*British Medical Journal*, June, 27 1891) reports two cases in which sarcinæ were found in the urine. In one, in a man seventy-one years old, they were found at an interval of fifteen years. In neither was the health interfered with. In both a catheter had been used. In one, the urine contained neither albumin nor sugar; in the other, pus was present.

To Obviate the Entrance of Air into the Pleura in the Performance of Pneumotomy, ROUX (*Journ. des Soc. Scient.*, June, 1891), in a case in which he opened a tuberculous cavity in the lung, united the two layers of pleura by means of a continuous suture, thus closing the pleural sac against the entrance of air.

The Medical News.

A WEEKLY JOURNAL

OF MEDICAL SCIENCE.

COMMUNICATIONS are invited from all parts of the world. Original articles contributed exclusively to THE MEDICAL NEWS will upon publication be liberally paid for, or 250 reprints will be furnished instead of payment. When necessary to elucidate the text, illustrations will be provided without cost to the author.

Address the Editor: GEO. M. GOULD, M.D.,
1004 WALNUT STREET,
PHILADELPHIA.

Subscription Price, Including Postage in North America.

PER ANNUM, IN ADVANCE . . . . . $4.00.
SINGLE COPIES . . . . . 10 CENTS.

Subscriptions may begin at any date. The safest mode of remittance is by bank check or postal money order, drawn to the order of the undersigned. When neither is accessible, remittances may be made, at the risk of the publishers, by forwarding in *registered* letters.

Address, LEA BROTHERS & CO.,
NOS. 706 & 708 SANSOM STREET,
PHILADELPHIA.

SATURDAY, OCTOBER 17, 1891.

THE OPHTHALMIA OF INFANTS.

IT is no exaggeration to say that if the medical undergraduate were well instructed in one bit of knowledge it would be of more benefit to humanity than his whole course in obstetrics. And yet, generally speaking, it is true that during his entire three years of obstetric study he hears not a single word of this that should be a part of his teaching, this that could be learned in five minutes and that is of such enormous importance; but by a hundred lectures he is taught how to deliver women that, as a rule, without his help deliver themselves most excellently well. All of which long text must not be construed to mean any undervaluation of the importance and excellence of obstetric teaching as usually given in our colleges. It is to be construed solely as a desire to emphasize the fact of the duty neglected by the professor of instructing his classes in the prophylaxis and treatment of ophthalmia neonatorum. It may also stand as a protest against the outrageous negligence of medical colleges in not making ophthalmology an obligatory study, and in not making an examination in the treatment of the commonest ocular diseases a prerequisite of graduation.

For many years ophthalmic surgeons have been hammering away at this, writing, teaching, and begging their *confrères* to heed the lesson. It is a very simple lesson, a perfectly well understood pathology, an infallible prophylaxis, and, if caught in the easily recognized early stages of the disease, an almost infallible cure. In spite of this, what is the fact? There are perhaps 75,000 people in the civilized world blind from infancy solely because the lesson has not been heeded; every day there turn up at the oculist's office cases that make one's heart bleed —mothers heartbroken because the baby is blind— cases that need not have been; cases that, had the oculist seen them a day or two earlier, could still have been saved.

The public cost of keeping a blind person in our institutions is about $130.00 a year. If we suppose a like cost obtains elsewhere, we find the world's expense-item for inexcusable negligence in ophthalmia of the newborn to be something like ten millions of dollars per annum. For the United States alone this expense is probably nearly or quite two million dollars. But this is not all. Suppose the needlessly blind, instead of an expense, were, by the possession of visual power, productive members of the community, and suppose we estimate the average value of their labor at one dollar a working day. If, therefore, we add this loss of productive labor to the actual expense of the support of these blind, we have, for the civilized world, the stupendous sum of between thirty and forty millions, and for the United States alone some seven millions of dollars. Every State has, therefore, the most absolute of rights to demand that the medical colleges within her bounds shall fit their graduates to cope with this evil. Every taxpayer is interested. This, of course, is the very lowest, but a very palpable argument against such criminal negligence.

Last spring, and every spring, many students are graduated in the United States without a rag of knowledge or power of art to forefend all this. It is a strange illustration of how in medicine an œstrual fury for strange knowledge may seize upon men, bacteriomanias, hydrophobiaphobias, and all the rest, while the great, the feasible and the simple duty is scorned.

> "Our best things are nearest us—
> Lie close about our feet;
> It is the distant and the dim
> That we are fain to greet."

What is every obstetrician's duty as to the care of the newborn baby's eyes? Immediately after birth,

he should cleanse the lids and the face all about the eyes with a weak bichloride solution, and drop some of this, or of a one per cent. solution of nitrate of silver, on the globes. The baby's hands should also be asepticized, and the nurse or mother instructed to cleanse her own hands, and not allow them, or cloths, handkerchiefs, etc., to come in contact with the infant's eyes. Despite these prophylactic measures, nurse, mother, and doctor must watch for the early signs of purulent conjunctivitis; any swelling or redness of the lids, or any purulent discharge from the eye, means that prophylaxis has failed, and that the entrenched enemy must be proceeded against with restless vigor. The eyes can still be saved.

Instead of this, what commonly happens? The baby's eyes or the dangers to them are never thought of, and when the lids of one eye begin to swell and a purulent discharge oozes from it, the mother is told by the nurse or someone else that the child has "only a little cold in its eye." The application of "breast-milk," or tea-grounds, or some such fol-de-rol is made, and the days go on while the eye is being ruined. If the doctor is called in he may vaguely suspect this to be something like a disease he dimly remembers to have heard of. If so, he prescribes a boric acid solution to be dropped into the eye. Even suppose the doctor realizes the danger (though this too rarely happens) and prescribes a true antiseptic, ten chances to one he will still make two fatal errors: he will order the antiseptic to be only dropped into the eye, and he will not isolate the diseased eye. He has never learned that there is no cure for purulent conjunctivitis unless the palpebral sulci are cleansed, and the germicide repeatedly brought into contact with every part of the palpebral and bulbar conjunctiva; and he has also not learned that, without isolation of the diseased eye and scrupulous precautions, pus from this eye is certain to get into the non-affected eye and ruin that also.

In such cases—constantly happening all about us—no conscientious physician would dare go on the witness-stand and testify that this is not unqualified malpractice, for which anyone guilty is liable for heavy damages. It would be a sad method of teaching a needed lesson, and one can only hope that for an individual's sake the lesson may not be so taught, though one must silently confess that should it arouse the whole profession to a realizing sense of its duty, the private and single tragedy would be for the common good.

A PAGE OF MEDICAL HISTORY.

THERE is a deal of good knowledge, good wit, and good literary work in the excellent article of DR. CONKLIN on "Molière and the Doctors" (*Transactions of the Ohio State Medical Society*, 1891). It is a pity that it should not have a wider circulation than a society report is likely to give it. This glimpse into the life of our professional brethren of only two hundred years ago is not only entertaining, but is of a double service; as the author acutely says:

"The medicine of the seventeenth century stands out prominently as one of the greatest landmarks in its history, and the story of its struggles and triumphs enables us to better understand the present and to more accurately forecast the future.

"We fortunately belong to a century which has illumined every department of human thought with learning and genius, and which has done so much for the upbuilding of scientific medicine. But we must not forget that each preceding age has wrought its full share in the evolution of medicine. It fell to the seventeenth century to break the chains of servitude and liberate medicine from the trammels of authority which had so long hindered the coming of modern science.

"To us it seems almost incredible that one of the most difficult lessons the race had to learn was to accept the testimony of the senses, and yet every page of history attests its truth. It is precisely here that we find the difference between ancient and modern medicine. The one concerned itself only with the proofs of authority; the other relies wholly upon the proofs of experiment and experience. Modern medicine aknowledges no intellectual restraint. She bids defiance to tradition, boldly questions authority, and sets precedent at naught. With the present means of inter-communication and interchange of ideas, which bring into elbow-touch co-workers in every corner of the globe, the day of long probation for alleged discoveries has gone forever. Illustrations crowd upon our attention. The Elixir of Brown-Séquard and Tuberculin of Koch, both too recent to need elaboration at our hands, strikingly illustrate the modern method of dealing with new problems. Every new hypothesis is at once submitted to fair but rigid laboratory and clinical tests, and by the result of these must it stand or fall. But opportunities bring with them responsibilities. A past, glorious in its achieve-

ments, warns us to avoid the errors of the epoch which we have been considering, lest another Molière should come gifted with the power to make us 'see oursel's as ithers see us,' and a future, splendid in its possibilities, lays upon us the obligation to so labor that the profession of medicine shall continue to advance with a broad front to greater victories."

Guy Patin, a Parisian physician of the seventeenth century, remarkable for wit, learning, and dogmatism, is thus neatly sketched:

"Patin was an active participator in the controversial disputes which raged around him. He combated the Arabians, denounced the surgeons and apothecaries, rejected the Harveian circulation and chemistry. He hated antimony because it came from the chemists and cinchona because it was introduced by the Jesuits. He believed implicitly in Hippocrates and Galen, in the old Faculty, and in Guy Patin. His creed contained but two articles: bleeding, and purging with senna. With a good lancet and a pound of senna he proposed to cure more patients than the Arabians with their polypharmacy. His love of bleeding was excessive, but in this he only reflected the orthodox practice of the day. He bled babes of three days and his mother-in-law of eighty years. He tells boastingly of a patient who recovered after seventy-two bleedings and forty purgings."

THE HOSPITAL AND DISPENSARY ABUSE.

The growing evil of the abuse of the benefits intended to be conferred by the charitable work of the hospitals and dispensaries of our large cities requires no special elaboration. The fact is too patent to escape the observation of even the least observant. It were urgently desirable that some appropriate remedy be devised for the correction of the evil. The abuse of a public charity must needs result in injury to both recipient and benefactor—and this injury is in turn transmitted from the individual to the community. It is gratifying to learn that the recognition of the wrong is eliciting expression in hospital reports, and especially gratifying that it should, in the following language, receive consideration in the second Report of the Superintendent (Dr. Henry M. Hurd) of such a model institution as the Johns Hopkins Hospital.

"It demoralizes any man to receive as a gift what he is able to pay for wholly or in part. Indiscriminate and hap-hazard charity begets habits of improvidence and a wastefulness, if not of actual vice among its recipients. No poor man, woman or child ought to suffer for good medical and surgical attention in this city from lack of ability to pay for it. On the other hand, no person should receive such attention as an absolute free gift who is able to pay any portion of the cost of it. I would urge that all applicants for relief at the Dispensary and Hospital be promptly and carefully scrutinized, in the interests of both the public and the Hospital. In addition to the evil effect upon the community of indiscriminate charity, there is also danger of doing injustice to the profession of medicine which numbers among its members so many persons actively engaged in charitable work. Neither the Hospital nor Dispensary should interfere with the sources of support of these men by affording free medical or surgical treatment to those who are able to pay for it."

EXCISION OF PART OF RIGHT LOBE OF LIVER.

We learn that on October 9 Professor W. W. Keen, of Philadelphia, removed from a patient a considerable portion of the right lobe of the liver for the excision of a cystic tumor, the entire mass taken away being about two-thirds the size of a man's fist. The woman's temperature has remained normal, or nearly so, since the operation, rising only once to 100° F. There seems every reason to believe that the patient will recover.

SOCIETY PROCEEDINGS.

AMERICAN OPHTHALMOLOGICAL SOCIETY.

Twenty-seventh Annual Meeting, held at Washington, September 23, 1891.

Papers on the "Extraction of Cataract," were read by Dr. D. Webster, of New York, Dr. H. Knapp, of New York, and Dr. J. A. Lippincott, of Pittsburg. The first and second advocated so-called simple extraction; the latter performs preliminary iridectomy, and removes the cortical matter by syringing.

Dr. C. S. Bull, of New York, reported "A Case of Brain-tumor, with Autopsy." There were persistent inequality of the pupils, a history of previous syphilis, attacks seemingly of petit mal and lapses of memory; also paresis of the internal recti muscles and ptosis; moderate optic neuritis in the right eye, which afterward subsided under large doses of potassium iodide; and later hemianesthesia developed. There was no headache until a few hours before death. The autopsy revealed a large glio-sarcoma in the left frontal lobe, without a sign of meningitis.

Dr. P. A. Callan, of New York, reported two cases of "Orbital Traumatism, Followed by Immediate Monocular Blindness, and Subsequent Atrophy of the Optic Nerve Due to Fracture Involving the Optic Foramen."

In one case, the blow was received over the left eye, while the right became blind.

DR. MYLES STANDISH, of Boston, had seen two cases in which it was stated that blindness had developed immediately after injury, but there was no ophthalmoscopic evidence of injury; the pupils reacted to light. He was inclined to regard these patients as malingerers; but three or four months later, the evidences of optic-nerve atrophy appeared.

DR. S. B. ST. JOHN, of Hartford, had seen a case in which blindness resulted from a resection of the infra-orbital nerve, attended with more than the usual amount of hemorrhage.

DR. S. D. RISLEY, of Philadelphia, had seen four cases of monolateral atrophy of the optic nerve, three of them following blows on some portion of the orbital ridge, and one after a blow on the top of the head.

DR. R. A. REEVE, of Toronto, reported a case of "Traumatic Pulsating Exophthalmos Treated by Ligation of the Common Carotid." The patient had received a kick on the side of the head and in a few days was conscious of a shrill sound, that later became a purring bruit, and pulsating exophthalmos developed. Compression of the carotid controlled the pulsation and bruit so long as it was continued, but intermittent compression kept up for hours at a time, over three months, failed to effect any permanent improvement. Five hours after the ligation of the carotid, the bruit returned. although it was readily controlled by compression of the other carotid. Ligation of the second carotid was advised.

DR. GEORGE C. HARLAN, of Philadelphia, had seen a case in which cure had been effected in six months by intermittent compression. The patient devised a pad and applied the treatment himself.

DR. E. GRUENING, of New York, found divergent squint quite amenable to the ordinary operative treatment, but the operation must be performed with a freer division of the tissues than for convergent squint. After the tenotomy he passes a ligature from one eye to the other, and leaves them fixed in a decidedly convergent position.

DR. S. M. BURNETT, of Washington, read a paper, entitled "Contributions to the Study of Heterophoria," which will appear in a later number of THE MEDICAL NEWS. He had found heterophoria less frequently than ametropia a cause of eye-strain. While, theoretically, prisms should be sufficient to afford relief, there were practical difficulties connected with their use, and it is a serious matter to have to constantly wear glasses of any kind if it be possible to dispense with them. This it is often possible to do by graduated tenotomy, which he believed could be adapted to the needs of the case. He reported a series of headaches of the severest type almost entirely relieved by such operations.

DR. GEORGE C. HARLAN, of Philadelphia, described a modification of Dieffenbach's operation for the restoration of the lower lid, designed to prevent dragging on the transplanted flap, or on the external canthus by cicatricial contraction, by replacing the flap used in reconstructing the lid by a second, sliding flap taken from the temple, where the cicatrization of a considerable raw surface would cause no injurious traction.

DR. S. THEOBALD, of Baltimore, reported two cases of successful skin-grafting for extensive loss of the substance of the eyelids. Thiersch's method was employed and the grafts were taken from the inner surface of the forearm and placed on the raw surface from which granulations had been removed.

DR. GEORGE E. DE SCHWEINITZ, read a paper, entitled "Neuroma of the Right Upper Eyelid and Adjacent Temporal Region," in which he described a case of neuroma of the upper eyelid and adjacent temporal region that had occurred in his service in the Philadelphia Hospital, and that had been observed both by his colleague, Dr. George M. Gould, and by himself. The growth was congenital, affected the upper eyelid of the right side and the right temporal region, the patient at the time of examination and operation being a lad of twenty years of age. Dr. de Schweinitz had performed three operations upon this case; the first a dissection of the tumorous mass from the eyelid, the second a plastic operation to relieve the resulting entropion, and the third, Panas's operation for ptosis, the final result of the surgical interference having been a reasonably good effect. Although clinically the case had presented the appearance of a fibro-fatty tumor, or perhaps of a circumscribed congenital elephantiasis of this region, a careful microscopic examination revealed that in addition to an overgrowth of the connective tissue of the part, as well as of the connective tissue of the walls of the vessels, sebaceous glands and hair-follicles, there were large strands of soft connective tissue, in the center of which were compressed and atrophied nerve-fibers. In all probability the growth had developed from the fibrous sheath of small cutaneous nerves, and had later involved the connective tissue of the structures just named. The research was illustrated by microscopic slides and a series of micro-photographs that had been prepared from these slides by Dr. William M. Gray, of the Army Medical Museum.

DR. F. M. WILSON, of Bridgeport, read a paper on "The Use of Vaselin in Gonorrheal Conjunctivitis," in which he advocated the employment of vaselin as an important adjunct in treatment. The unguent furnishes a protecting coating to the cornea, aids in keeping clean the conjunctival sac, and greatly diminishes the pain and risk of perforation of the cornea. He reported the results of its use in forty-seven cases, on which his conclusions were based. To be efficient, the vaselin must be applied freely between the lids, and the manipulation of the eye continued until the unguent has become liquid and made its way to every part of the conjunctival sac.

DR. H. KNAPP, of New York, demonstrated and recommended a roller-forceps for the mechanical treatment of trachoma by extrusion of the exudate from the conjunctival tissue. He had used the forceps in fifty-eight cases, and found that it caused less laceration of the tissues than other methods of accomplishing the same purpose. Cases of follicular disease are permanently cured by one thorough expression of the diseased tissues, while cases of mixed character may in addition require a few weeks' treatment with astringents. The mechanical treatment of trachoma is certainly a great advance over the method by the repeated use of caustics and astringents alone.

DR. E. E. HOLT, of Portland, Me., reported six cases of extraction of foreign bodies from the vitreous. In

several the wound of entrance was enlarged and the bit of steel searched for and extracted with the electro-magnet. In one, in which the foreign body was not a bit of steel, the wound was extended and the body was extracted with the forceps. In all but one case the result was most satisfactory; in that case two weeks had elapsed without efficient treatment.

DR. S. B. ST. JOHN, of Hartford, reported three cases of extraction of foreign bodies from the eyeball, in one of which a bit of wire from a whip-lash remained, transfixing the cornea, iris and lens for a month, without great reaction in the eye. In another, a foreign body imbedded in the iris was removed by drawing out a portion of the iris, releasing the body and returning the iris to the eye substantially uninjured. In the third case, a bit of steel discovered at the back of the eye with the ophthalmoscope was left to become encapsulated.

DR. L. H. TAYLOR, of Wilkesbarre, reported a case of brain-tumor with a high grade of choked disk, in which there were no convulsions, except a falling-down at the beginning of the symptoms, from which time on the patient was confined to the house. The optic nerves later became atrophied and there was hemianesthesia. At the autopsy a large glioma was found springing from the corpora quadrigemina and the floor of the fourth ventricle, pushing up the posterior lobe of the cerebrum and causing an erosion of the overlying portion of the skull.

DR. ALBERT G. HEYL, of Philadelphia, read a paper on "The Caliber of the Retinal Vessels in Injuries of the Convexity of the Brain." This paper was a contribution to what Dr. Heyl calls diametroscopy of the retinal vessels, or the study, by inspection, of their diameter. The clinical material upon which the observations were made consists of twelve cases of injury to the vault of the cranium, drawn for the most part from the wards of the Episcopal Hospital for the purposes of study. These cases are divided into two groups: 1. Those that presented the phenomenon of delirium, or the initial stage of it. In this group, the retinal veins, while but slightly altered in diameter, were rounded in contour, and had a circular cross-section. The arteries showed a decided tendency to contraction. One was a case, typical of the group—a case of pure brain-contusion, ending fatally. At first a slight enlargement of the arteries was noted, followed to the close by steady contraction. This contraction was a slow process. An additional case was cited in which head-injury was followed by atrophy of the optic nerve, and the retinal vessels presented appearances analogous to those already described. Two cases were also reported, in which intracranial hemorrhage—at least, in one case—occurred at the time of injury, from a wound of the arteria meningea media, requiring ligature; in these the diameter of the vessels varied somewhat from that described. 2. In this group a psychical phenomenon that Dr. Heyl calls *sopor alternans*, was presented—*i. e.*, the condition in which a patient, after a severe head-injury, becomes alternately conscious and unconscious. In the most typical of the three cases in this group, in the *sleeping* stage the pupil is contracted, in the *waking* stage dilated; corresponding changes were noticed in the retinal vessels. In the *sleeping* stage the veins were about normal in diameter, the artery three-quarters of the normal diameter; in the *waking* stage, both arteries and veins were contracted to one-half the normal diameter.

DR. T. G. SUTPHEN reported three cases of amaurosis; one after suppression of the menses, another after parturition, and a third with complete blindness in one eye without ophthalmoscopic changes. The first and second progressed to atrophy; in the third, partial recovery ensued.

DR. G. E. DE SCHWEINITZ, of Philadelphia, next read a paper entitled "Additional Experiments to Determine the Lesion in Quinine-blindness." He briefly reviewed the results of his previous experiments to determine the lesion in quinine-blindness, in which he showed that quinine given to dogs in quantities varying from one grain to four grains to the pound produces blindness in from three to fourteen hours, the earliest appearance of the amaurosis after the injection being three hours. The ophthalmoscopic picture in these animals was in all particulars similar to that which has been noted in human beings suffering from quinine-amaurosis.

A second series of experiments was detailed in the present paper, by which it was shown that the same results can be produced with all the various salts of quinine, and that the prolongation of quinine-blindness produces a true atrophy, sometimes associated with the production of thrombosis in the central vessels. The sections upon which these facts were based were made by Dr. William M. Gray from a dog that had been for two months kept completely blind. The microscope showed cupping of the optic-nerve entrance, complete atrophy of the optic nerve, chiasm and optic tracts, an organized thrombus in the central vessels, and some degeneration of the lenticular ganglion. A very remarkable fact is the selection of the optic nerve for the influence of quinine, as careful sections of the ciliary and other cranial nerves showed absolutely normal structure. Both of these sets of experiments seem to prove that the action of poisonous doses of quinine is originally due to a constriction of the peripheral vessels; that later on, distinct changes, either in the blood itself or in the bloodvessels, are developed, and that consequent thrombosis may occur, followed by a complete atrophy and fatty degeneration of a large portion of the visual tract.

DR. CHARLES A. OLIVER, of Philadelphia, read a paper entitled "A Clinical Study of the Ocular Symptoms Found in the So-called Mongolian Type of Idiocy." He found that the irregularity, inequality and malposition of the bony orbits and their contents, which more than anything else characterize the Mongolian type of idiocy, are instances of general osseous and ligamentous malformations characteristic of the disorder. The eyeball itself presents the results of a low grade of chronic neuro-retinitis and choroiditis. The intra-ocular termination of the optic nerve and adjacent retina share in the soft gelatinous edema recognized in the external portions of the organ. The mucous membranes of the eye and its appendages are liable to the chronic inflammations that occur in other mucous membranes. As part of the imperfect development and consequent disease of the entire vascular system, the walls of the retinal vessels appear thin, peculiarly tinted, and there are hemorrhages into the retina.

DR. EDWARD JACKSON, of Philadelphia, called attention to an unavoidable distortion of lines seen through

cylindrical lenses, unless such lines run parallel or perpendicular to the axis of the lens. The distortion varies with the strength of the lens and its distance from the eye. With lenses of unequal strength or with axes not parallel the distortion necessitates a readjustment of balance for the oblique muscles, and this is capable of causing eye-strain, which is lessened by placing the lenses as close as possible to the eye.

DR. L. H. TAYLOR, of Wilkesbarre, reported a case of insanity following the instillation of atropine into the eyes of a young woman who had been under severe mental strain, partly from nursing an insane mother. She had used the drops two days without unusual symptoms, and then had paroxysms of causeless weeping and developed melancholia.

DR. S. D. RISLEY, of Philadelphia, in a note on hyoscyamine, reaffirmed his high estimate of its value as a mydriatic, but stated that it was a drug extremely liable to essential alteration in the process of manufacture, and that many preparations of inferior quality were on the market. To get its good effects one must use a crystalline hyoscyamine prepared by one of the best makers.

DR. SAMUEL THEOBALD, of Baltimore, called attention to subnormal accommodative power as a cause of asthenopia. It is to be remedied by the wearing of convex lenses for near work, with decentering outward if necessary.

The following officers were chosen for the next year:

President.—Dr. Hasket Denby, of Boston.

Vice-President.—Dr. Geo. C. Harlan, of Philadelphia.

Secretary and Treasurer.—Dr. S. B. St. John, of Hartford.

Corresponding Secretary.—Dr. J. S. Prout, of Brooklyn.

AMERICAN OTOLOGICAL SOCIETY.

Twenty-fourth Annual Meeting, held at Washington, September 22, 1891.

DR. H. KNAPP, of New York, read a paper entitled, "Operations for Mastoid Disease," in which he reported two cases. In the first there was otorrhea, intense headache, nausea, giddiness and some stupor. In the fourth week the mastoid was opened to the depth of fully half an inch, but no pus was found. The patient was at first relieved, but his symptoms afterward returned, and he died comatose in the eighth week. The autopsy disclosed diffuse purulent meningitis and a small abscess in the jugular fossa, separated from the wound of operation by a thin layer of healthy bone. Had the operation gone a little deeper it might have saved the patient's life. In the second case the prominent symptom was severe pain, radiating from the mastoid, and bulging of the upper part of the drum membrane. Treatment failed to afford relief, and the mastoid became tender and doughy. An extensive opening in the mastoid disclosed intense congestion of the bone and the membrane lining the air-cells, and a few granulations, which were removed. The patient was relieved by the operation and got quite well. Operation is justified in congestive mastoiditis, which otherwise is apt to persist for years, and lead to sclerosis.

DR. C. J. BLAKE, of Boston, reported twenty-three recent cases of operation, with removal of all diseased bone by curetting with a sharp spoon after perforation with a drill. In several cases the cure was complete in two weeks or less; but in some, in which the operation had been long delayed, the cure was slower, and the permanent damage great. In one case death resulted after the inefficient treatment of making an incision only through the soft tissues; and in another, in which the operation was delayed, metastatic irido-choroiditis caused the loss of an eye; there was also involvement of the hip.

DR. E. GRUENING, of New York, found tenderness over the affected part the constant and significant indication for opening the mastoid. He removes all the cortex of the bone and finds no after-treatment required.

DR. F. M. WILSON, of Bridgeport, maintained that no single symptom can be regarded as conclusive. He had seen two cases of pyemia from mastoid disease, one of them ending in death by pulmonary abscess.

DR. B. A. RANDALL, of Philadelphia, reported a case of suppuration about the ear, with epileptiform seizures of growing frequency. Exploratory trephining was performed behind the meatus. Slow healing went on to the fourteenth day, when there were pain and swelling below the mastoid, followed by severe headache, meningitis, and death on the twenty-third day. The autopsy disclosed denudation of the antrum and attic, with erosion of the ossicles, and sub-arachnoid purulent effusion with no trace of direct communication from the temporal bone. A series of specimens from fatal cases were exhibited, showing various channels of communication of the inflammatory process with the intra-cranial structures.

DR. J. M. RAY, of Louisville, reported a case of acute suppuration of the middle ear, causing meningitis and death, in which the autopsy revealed no involvement of the temporal bone; the septic infection seemed to have taken place through the general circulation.

DR. CHARLES H. BURNETT, of Philadelphia, read a paper on "Excision of the Membrana Tympani and Necrotic Malleus for Chronic Purulent Otitis Media," reporting four cases in which, after the failure of all other rational treatment, he had excised the tympanic membrane and the malleus. In the first case suppuration of twenty-five years' standing was checked, hearing remaining unaltered. In the second, the discharge was lessened, but not checked; hearing improved from ten inches to ten feet. In the third—a case of chronic suppuration, with frequent cholesteatomatous collections and pain—the discharge was checked and the hearing improved from zero to two feet. In the fourth, one of thirty years' standing, the discharge ceased and the hearing improved from six inches to eight feet.

DR. SAMUEL THEOBALD, of Baltimore, read a paper on "Healing of Old Perforations in the Drum Membrane." He reported some partially successful efforts to promote healing of old perforations of the tympanic membrane by the wearing of artificial drum-membranes of absorbent cotton moistened with vaselin. These must be carefully placed and renewed every week or so. He had also added balsam of Peru for its stimulating effect.

The following officers were chosen for the next year:

President.—Dr. Gorham Bacon, of New York.

Vice-President.—Dr. Huntington Richards, of New York.

Secretary and Treasurer.—Dr. J. J. B. Vermyne, of New Bedford, Mass.

AMERICAN PHYSIOLOGICAL SOCIETY.

Second Special Meeting, held at Washington, D. C., September 22, 23 and 24, 1891.

FIRST DAY—SEPTEMBER 22D.

DR. H. N. MARTIN, of Baltimore, read an interesting paper on "The Effects of Bleeding and Starvation upon the Proteids of the Blood." In his experiments he used cats. They were bled twice. At the first bleeding from 50 c.c. to 80 c.c. of blood were withdrawn, and after an interval of twenty-four hours the animals were bled to death.

The blood was subjected to an analysis which showed in every case a marked decrease in the amount of proteids contained in the blood obtained in the second bleeding, while the fibrinogen was greatly increased in quantity. From his experiments Dr. Martin wished to show that hemorrhage caused a great diminution in the proteids, while the fibrinogen was greatly increased between the first and second bleedings, as a result of the manufacture of red blood-corpuscles from the hematoblasts which threw out their nuclei in this process, and that it was from these extruded nuclei that the great increase of fibrinogen was derived.

DR. S. J. MELTZER, of New York, read an elaborate paper on the "Respiratory Changes of the Intra-thoracic Pressure, Measured in the Mediastinum Posterior," in which he endeavored to show that the method of measuring the intra-thoracic pressure through the esophagus could not be relied upon, owing to the irregularity of the thickness of the walls of the esophagus. The method of Dr. Meltzer consisted in making an incision in the crico-thyroid muscle, and gently passing a catheter down into the mediastinum posterior. By connecting this catheter, by means of a rubber tube, with his registering apparatus, he was able to get a correct record of the intra-thoracic pressure. It was found that the pressure above the fourth rib was considerably less than that below that level.

SECOND DAY—SEPTEMBER 23D.

DR. WM. NOYES read a paper on "Experimental Studies on the Knee-jerk in Terminal Dementia. (*a*) During the cycles of depression and exaltation. (*b*) During sleep."

In his experiments Dr. Noyes clearly demonstrated that except during a period in which the subject was in a state of profound mental depression, the knee-jerk was as distinct as in the normal individual; during conditions of depression, however, it was greatly diminished; while with the disappearance of these conditions the knee-jerk again returned to its normal condition. It was demonstrated that during sleep the knee-jerk could be elicited without awakening the hemispheres—that is, the leg would respond to a blow upon the ligamentum patellæ that was not sufficient to interfere even with the snoring of the subject. Any unusual noise in the room, such as walking across the floor, slamming a door, or rapping upon a table at the time the blow was struck, would greatly increase the force of the knee-jerk.

When the subject was in a condition of semi-sleep, *i. e.*, not snoring, the curves on the tracing-paper caused by the knee-jerks were irregular, but, as soon as the subject was awakened and spoken to, they again became regular. This, it was thought, was caused by the fact that, when the subject was awakened, more blood was sent to the spinal cord, as a result of which the reflex again became normal.

DR. J. W. WARREN, of Boston, followed with a paper on "The Knee-jerk Studied Simultaneously in Both Legs."

In his experiments he arranged two hammers, by means of springs, so that every blow was struck with the same force, and so that either one or both legs could be struck simultaneously or successively at a short interval. When, after a subject had been struck a number of double blows, a single blow was suddenly given to one leg alone, both legs would respond to the stimulus.

Dr. Warren also brought out the fact that when a series of single blows were given to one leg alone and then a double blow was suddenly struck, he would fail in a great many instances to get a double jerk. This failure was more marked in the right leg than in the left, the left responding in 16 per cent. of the cases and the right in only 9 per cent. This difference he attributes to the fact that the left leg is the one usually used in making a test, and in a series of experiments this difference is greatly diminished.

When a series of single blows were struck on one leg and then a single blow was struck on the other leg, a response was often wanting. This failure was also more frequent on the right than on the left. During sleep, he often failed to get any response to a blow, unless a noise was made at the time of striking the blow. In some cases, however, a second blow would bring out a response without the assistance of a noise.

THIRD DAY—SEPTEMBER 24TH.

DR. W. P. LOMBARD, of Worcester, Mass., read an interesting paper on "Some of the Influences that Determine the Strength of Voluntary Muscular Contractions," as determined by a simple and effective apparatus that was exhibited. Dr. Lombard's experiments were all conducted upon himself; the results obtained were eminently satisfactory. He demonstrated that loss of power was due to fatigue of the central nervous system and not to fatigue of the muscles themselves. When the muscle was no longer able to lift a weight, it was stimulated by electricity and promptly responded by a strong contraction, showing that the muscle was not fatigued. When the weight was detached from the muscle, the will-power could induce a contraction; so that the fatigue was somewhere between the muscle and the brain. Dr. Lombard also showed the influence exerted by weather, food, exercise, alcohol and tobacco upon the amount of work performed. Food, exercise and alcohol increased the amount of work performed. When the barometer was rising, power increased; with a falling barometer there was a de crease of power. High temperature diminished power.

Humidity and high temperature diminished power. With the humidity not excessive, and the temperature not very high, there was but little effect upon power. Whenever he smoked a cigar, his power diminished. Exercise increased his power. The greatest increase of power he derived from a small quantity of whiskey and water; and as the quantity of whiskey taken was small, there was no after-depression. His power also changed with the diurnal changes of the barometer, so that his minimum power was at 4 P.M.

DR. C. F. HODGE, of Worcester, Mass., followed with a valuable paper on the "Diurnal Changes in Nerve-cells as the Result of the Normal Activity and Rest of the Animal." His experiments showed a decided shrinkage in the nuclei of the nerve-cells examined in the evening, when compared with those examined in the morning.

DR. H. P. BOWDITCH, of Boston, read a paper on "The Fatigue of Nerve-fibers, studied by Means of the 'Action' Current."

DR. V. C. VAUGHAN, of Ann Arbor, read an abstract of a paper in which he detailed the discovery of a new bacterial product from typhoid germs. This product is so poisonous that when ten milligrams were injected into a guinea-pig, it caused death in half an hour.

The session was closed by the reading of a paper on "The Size of the Cranial Nerves in Man," by DR. H. H. DONALDSON, of Worcester, Mass.

ASSOCIATION OF AMERICAN ANATOMISTS.

Fourth Annual Meeting, held at Washington, September 23, 1891.

APPROPRIATE resolutions on the death of Professor Joseph Leidy, President of the Association, were offered by DR. D. S. LAMB and passed by a standing vote.

DR. WM. P. CARR, of Washington, read a paper entitled "The Systematic Use of the Eye in Teaching Anatomy," in which he maintained that the training of the hand by dissection of the subject and attention in the lecture-hall to didactic statements are not sufficient for all purposes of education, but that the teacher, with chalk in hand, drawing outlines upon the blackboard or demonstrating from models on the lecture-table, is doing more important work. The ability to prepare papier-maché models is a desirable accomplishment. The speaker exhibited one model, made by himself, representing the human cerebrum, with the special object of giving correct impressions of the fornix and the descending horn of the lateral ventricle. Dr. Carr claimed that with a little practice anyone could make models at comparatively slight expense. The full text of the paper will appear in a later number of THE MEDICAL NEWS.

DR. HARRISON ALLEN, of Philadelphia, read an elaborate paper on "The Teaching of Anatomy to Advanced Students." He claimed that those who, after completing their medical studies, still desired to advance in the direction of anatomical research, had little or nothing offered them in our medical schools; a movement should be initiated to establish courses of instruction for such men. In his judgment, this plan would embrace a scheme of physiological anatomy that might be said to represent the plan designed over a hundred years ago by John Hunter. Dr. Allen approved of the establishment of a Hunterian museum, and, if practicable, of a Hunterian laboratory, in connection with the University scheme. Dr. Allen's paper will appear in full in a later issue of THE MEDICAL NEWS.

DR. ROBERT REYBURN reinforced Dr. Allen's claim as to the physiological basis of teaching anatomy. The three papers elicited much discussion, which, on the whole, was favorable to the tenets claimed.

DR. WM. BROWNING, of Brooklyn, read a paper on the "Arrangement of The Supra-cerebral Veins in Man, as Bearing on Hill's Theory of Developmental Rotation of the Brain," in which he endeavored to show that the disposition for the transverse cerebellar veins to remain at right angles to the main axial vein was evident throughout life. Owing to the curvature of the cerebrum forward during development, the veins in this portion of the encephalon depart from the embryonic scheme indicated and the vessels become displaced obliquely downward and backward.

PROFESSOR D. J. CUNNINGHAM, of Dublin, by invitation of the Chair, made an interesting statement respecting the development of the fissure of Rolando and the adjacent fissures, as well as those of the island of Reil. He showed the harmonies existing between the two sets of fissures. All the fissures named appear to be composed of three distinct simple involutions that become united at a late phase of development.

DR. C. HEITZMANN, of New York, read a paper on "The Structure of Basis-substance and Cement-substance." He had already shown that the basis-substance of all the varieties of connective tissue is structural, but freely supplied with living matter, in the same way as is protoplasm. The changes that take place in the process of inflammation, the reappearance of protoplasm after a liquefaction of the more solid substances, filling the meshes of the reticulum of living matter, likewise furnish proof of the vitality of basis-substance. Heitzmann was also the first who succeeded in demonstrating the reticulum in living protoplasm. The cement-substance between the individual epithelial and endothelial cells is traversed by delicate processes that have been shown to penetrate deeply into the protoplasm of epithelial cells. These processes are also constituted of vital matter and actively participate in the process of proliferation in inflammation as well as in the formation of tumors. Thus the continuity of living matter is established in all the tissues throughout the animal and vegetable organism, and the main point of the cellular theory, that cells are individuals, is proved to be a fallacy.

DR. W. M. GRAY, of the United States Army Medical Museum, exhibited a number of serial fetal sections mounted in large frames. He also showed a number of enlarged photographs of the same sections.

DR. HARRISON ALLEN, of Philadelphia, made some remarks on the teeth of cheiroptera. He claimed that some of these teeth were tactile in function, since from their small size and the absence of fixed positions they could have no use in attrition or prehension. In some genera, the cingula on the premolars were entire, features unknown in any other of the mammalia. The reduction in size of the last molar was secured by a novel method, the tooth not becoming rounded or nodular, as is the

rule, but the plan of the fluted and complex form of the anterior molars being retained, even as a rudiment. The action of the tongue as a mechanical factor in forcing the teeth apart was dwelt upon, and comparisons were drawn between the appearances seen in the condition known as macroglossia as met with in man, and the arrangement of the teeth in animals having long, prehensile tongues.

DR. E. A. BALLOCH, of Washington, D. C., read a paper on "The Relative Frequency of the Psoas Parvus Muscle in the Colored Race." It was shown that the psoas parvus is almost invariably present in the negro on both sides and is well developed, while in the white race it is infrequently so.

DR. FRANK BAKER, of Washington, presented specimens of platycnemic tibiæ, as well as exceptional forms of femora and fibulæ that had been claimed as having value in identification of race. Dr. Baker claimed for such peculiarities less importance than had been accredited them by writers.

DR. D. S. LAMB, of the Army Medical Museum, Washington, D. C., read a paper upon "The Supra-condyloid Process in the Human Subject." An examination of over 620 humeri from whites, blacks and Indians, of both sexes and of all ages, showed the presence of this process but once. This rarity was in striking contrast to the frequency with which the anomaly has been found by European observers, as Gruber and Struthers. The analogy of the process to the supra-condyloid foramen in the lower animals was discussed. Both the foramen in them and the process in man were to convey the brachial vessels and median nerve and protect them from pressure in lateral movements. The process is a muscular tubercle for the attachment of an anomalous slip of the pronator radii teres muscle.

The paper concluded with a contrast between such animals as the cat, which have this foramen, and dogs, which do not have it, but do have the olecranon perforation (not present in cats), and discussed the significance of these facts in relation to the natural movements of those animals. As to the process in the human subject, it was apparently a reversion.

MR. F. A. LUCAS, of Washington, exhibited museum specimens designed to demonstrate homologies of bones in the skeleton of man and the animals related to him.

The paper of IDA H. HYDE, of Chicago, entitled "Notes on the Hearts of Certain Mammals," was read by title. From a study of the hearts of many animals, certain facts were observed and conclusions reached warranting further investigation. According to some authorities, the presence of the tuberculum Loweri and Eustachian valve in the cat have as yet not been determined. Nevertheless, Miss Hyde found in the heart of every animal examined what she considers the homologue of the tuberculum Loweri of the human heart.

She found the Eustachian valve only in man and in the monkey, and a remnant of it in the cat. It extends caudally over the orifice of the coronary sinus, and protects it, differing in these respects from that of man. It is this valve that in the cat has been mistaken by anatomists for the Thebesian valve.

The statements concerning the Thebesian and Vieussens valves are perplexing. Some writers state that the Thebesian valve covers the orifice of the coronary vein, whereas this orifice is guarded by the Vieussens valve—so named in honor of its discoverer. According to other writers, the coronary valve guards the orifice of the coronary sinus; but the valve protecting this orifice was first described by Thebesius, and in his honor called Thebesian valve. It is a crescentic valve at the cephalic edge of the orifice.

Miss Hyde rejected the generalization that the Thebesian valve is present in every instance in which the coronary sinus receives blood from the heart alone, as in man and the cat, but is absent in those animals that have a left precava, or left azygos, as in sheep and the rabbit, since she had found the Thebesian valve in the rabbit, in which, according to this generalization, it ought not to be, while it was absent in the panther, the cat, and the dog, in which, according to the statement, it ought to be present.

Since a valve protecting the termination of the middle cardiac vein existed in every heart examined, and as it is not named, Miss Hyde suggested that it be called the coronary valve.

Some anatomists hold that the coronary sinus is the lower dilated part of the left azygos or left precava when it exists, and that the great coronary vein opens into this trunk. Others, again, claim that the coronary sinus is the dilated part of the coronary vein. Miss Hyde believes that the coronary sinus is the persistent primitive ductus Cuvieri, and that the great coronary vein empties into it, as well as the left azygos or left precava when it exists, the blood passing through it to the right auricle.

Since the oblique vein of Marshall does not send branches into the substance of the heart, it is not, as the older anatomists thought, a branch of the great coronary vein. Although said to be unprovided with a valve, Miss Hyde found one over its orifice in the heart of the Cebus monkey. Inasmuch as the embryo heart shows the oblique vein of Marshall to be the termination of the primitive left precava, she cannot agree with those who hold that it is the termination of the left azygos.

The following resolutions were adopted:

Whereas, The subject of comparative anatomy of race is an important one, and special advantages for the observation and collection of material therefor are afforded among the negro race in North America; be it

Resolved, That this Association recommend that a circular be prepared by the Executive Committee for distribution among the anatomists of North America, inviting coöperation;

Resolved, That the Executive Committee is authorized to incur a cost in printing and distributing these circulars to an amount not exceeding $25.

Fifteen new members were elected.

The following embrace the officers of the Association for the ensuing two years:

President.—Harrison Allen, of Philadelphia.

Vice-Presidents.—Charles Heitzman, of New York; T. N. Gill, of Washington, D. C.

Secretary and Treasurer.—D. S. Lamb, of Washington, D. C.

Delegate to Congress.—F. J. Shepherd, of Montreal.

Alternate: R. W. Shufeldt, of Washington.

Executive Committee.—Burt G. Wilder, of Ithaca; T. Dwight, of Boston, and E. C. Spitzka, of New York.

THE AMERICAN ELECTRO-THERAPEUTIC ASSOCIATION.

First Annual Meeting, held at Philadelphia, September 24, 25, and 26, 1891.

FIRST DAY—SEPTEMBER 24TH.

THE President, DR. G. BETTON MASSEY, delivered an address entitled "A Plea for the Associated Cultivation of Special Expertness in Medicine," which will be found elsewhere in the current number of THE MEDICAL NEWS.

DR. A. D. ROCKWELL, of New York, read a paper entitled "Electro-therapeutics in America," which is to appear in a subsequent number of THE MEDICAL NEWS.

DR. BLACKWOOD, of Philadelphia, stated that he had operated on thirteen cases, each of which had been diagnosticated by at least one eminent gynecologist. He had used the faradic current of a strength as great as could be borne, and preferred faradism to galvanism because of the action of the former on the muscular fibre. He maintains that the faradic current does destroy the integument. For the last ten years he had obtained the best results from central treatment, which he considers the best means to overcome obscure nervous affections. Nevertheless, he often depended on localized treatment as well.

DR. AUGUSTIN H. GOELET, of New York, read a paper on "The Action and the Application of the Faradic Current in Gynecology," in which he maintained that imperfectly constructed apparatus is the cause of the indifferent results that have been obtained by various observers. The construction of secondary coils has heretofore been looked upon with such indifference by physicians who use them, that the manufacturers, with no guide for their construction, have suited their own convenience, regardless of the physiological effects to be produced. In consequence, these coils in the ordinary apparatus will be found constructed of wire from No. 15 to No. 26, and from sixty feet to two hundred yards in length. Experience has shown that the faradic batteries of ordinary construction are totally inadequate for gynecological work, and satisfactory results cannot be expected from their use. The uncertainty of the statements of manufacturers regarding the length of the wire composing secondary coils has led Dr. Goelet to advise those who desire to be accurate to measure the resistance of their coils and calculate the length for themselves. He considers the Engelmann battery, with three different secondary coils, to be the only reliable apparatus manufactured in this country, suitable for gynecological work. In it the secondary coarse-wire coil is made of No. 16 wire, about 75 yards long; the intermediate is of No. 22 wire, 225 yards long; and the fine-wire coil is of No. 32 wire, about 660 yards long.

Though these coils are to be regarded as a great improvement on others, they do not wholly meet the requirements of gynecological work, since in very sensitive conditions the current from the finest coil cannot be borne. It has, therefore, been suggested that one spool should contain 1500 yards of No. 36 wire, which, if tapped at 1000 yards, would give two additional coils, one of 1000 and one of 500 yards in length; then another coil of No. 32 wire, 800 yards long, tapped at 500 yards, would give a coil of that length, one of 300 and another of 200 yards; then there is another coil of No. 22 wire, 250 yards long, to correspond with Engelmann's intermediate. There should also be a coarse-wire coil of No. 16 wire, about 100 yards long. By this arrangement practically eight different coils are secured, and a corresponding variation of the current, with but four spools; so that it would be possible to treat very sensitive conditions that could not be approached with the other coils.

Evidence was adduced and experiments cited showing conclusively that there is a marked difference in the effect of the current as it is derived from coarse-wire and fine-wire secondary coils, and in accordance with different lengths of wire of the same size. The current from the coarse-wire coil is one of volume or greater ampèrage, as distinguished from that of the fine-wire coil, which is a current of tension or greater electromotive force. The former is useful for muscle-stimulation, the latter for nerve-sedation. The failure to obtain satisfactory results with the faradic current was attributed to the imperfect and variable construction of apparatus by different manufacturers. The use of a rheostat or controller in the secondary circuit does not sufficiently influence the physical conditions of the current to make one coil suitable for all purposes.

The vibrator or current-breaker upon the ordinary faradic apparatus produces interruptions entirely too coarse, while the movement is uneven and irregular. To produce sedation with the fine-wire coil a maximum rapidity of interruption should be obtained; there should be not 50 or 80 interruptions, as is usually the case with the ordinary apparatus, but from 100 to 200, per second. Coarse interruptions are more stimulating and irritating, while fine interruptions are more sedative. It is important to use coarser vibrations for the coarse-wire coil, and finer vibrations for the fine-wire coil. The current from the coarse-wire coil is used for muscular stimulation, and that from the fine-wire coil for sedation. In applying the current for muscle-stimulation it is desired to produce alternate contraction and relaxation in imitation of the normal physiological action; the interruptions must be slow, so as to allow the muscles time to respond in a normal manner—that is, sufficient time must be allowed between the interruptions to allow the molecular changes to take place. In effecting sedation it is desired to paralyze the sensory nerves and to exhaust and relax the muscles, thus relieving the painful contractions; the interuptions must therefore be fine. When the interruptions are rapid the muscles are unable to respond to every vibration, and constant contraction or a tetanoid condition is produced, which eventually exhausts the contractile power of the muscles, so that a condition of relaxation is produced if the application is continued long enough. This constant and intense stimulation of the sensory nerves likewise results in a temporary loss of their power to respond, and a condition of anesthesia is brought about, which is more or less prolonged, according to the duration and frequency of the applications. To secure sedation the application should be maintained for from ten to twenty minutes; the strength of the cur-

rent must be increased gradually, without jerk or shock, and it should be withdrawn in the same manner. The duration of the application of the current from the coarse-wire coil should be limited to five minutes.

As a result of the influence of the current upon the vasomotor nerves and the capillary circulation, blood-stasis is relieved and the absorption of effete products is hastened.

Dr. Goelet maintained that the faradic current displays polarity; observation has shown that there is a distinct difference in the physiological action of the two poles. This is explained by the fact that, on account of the high resistance of the human body, only the break-current has a perceptible action, the make-current being cut down to such an extent by self-induction as to make its action upon human tissues inappreciable. Hence, when used upon human structures, the faradic current may be said to flow in one direction; it is not an alternating, but an interrupted current.

The best effect of the secondary current is obtained only when the secondary coil completely covers the primary coil, that is, when the whole of the secondary coil is receiving the full amount of induction. In order to secure this from the beginning of the application and at the same time to make it bearable to the patient, a rheostat or regulator, composed of fine German-silver wire of a length sufficient to afford adequate resistance, is placed in the battery circuit. By this means the operator has perfect control of the current and graduates it in accordance with the requirements of the case. The increase or decrease of the secondary current is regulated by increasing or diminishing the strength of the current in the battery circuit by means of this regulator, which interposes a variable resistance. The method of operation consists in applying the electrodes with the secondary coil removed from the primary coil; then allowing just sufficient current to flow through the regulator in the battery circuit to operate the vibrator smoothly, but feebly; the secondary coil is then slowly moved until the primary coil is completely covered. The strength of the current is still further increased by allowing more current to flow through the rheostat or regulator until the desired intensity is reached. Applied in this way, the best effect of the secondary current is secured from the beginning of the application, and the most sensitive conditions, that could not possibly be treated in the ordinary manner, may be brought under its influence.

Acute inflammatory processes are also amenable to treatment with the faradic current, under suitable conditions of high tension, as when it is derived from a coil of very fine wire of great length, if a maximum rapidity of interruptions with perfect smoothness is secured—the effect being obtained by restoring the equilibrium of the circulation.

DR. BIGELOW, of Philadelphia, stated that clinically there is a very marked, decided, and important difference between primary and secondary currents. In all cases of ovarian troubles the current from the secondary coil is the only one that will be tolerated. He had seen cases of ovaritis, characterized by persistent and aggravated pain, yield at once to applications of the secondary current; similar cases were aggravated to a degree unbearable by the primary current. In some recent observations he had seen ovaritis yield more rapidly to the static current, which is more like the faradic. The sensation produced by the secondary current is pleasant; the action of the current as a sedative is marked.

The secondary current is much less a muscular stimulant than the primary current. In cases of pain and of fibroid tumors the faradic current is to be preferred.

DR. HAYES, of Chicago, stated that clinical experience had demonstrated that the faradic current is sedative in its properties, and the question now presents itself, How can the sedative properties necessary in ordinary practice be developed? He had not been able to recognize any physiological difference between the two poles of the faradic battery; he was satisfied that pain can be relieved with either pole; whether one has a more sedative property than the other he does not know. The fine wire is capable of affording relief, but is also capable of doing great mischief. In subacute conditions inflammation may be lighted up by a weak current of a few minutes' duration. Dr. Hayes related the case of a young woman with pain and tenderness in both inguinal regions, in whom the temperature at no time was more than 99.5°. After three or four days' treatment with the ordinary hot douche and potassium bromide, an application of the faradic coil was made. The pain was somewhat relieved, but in the course of a few days it was evident that a hematoma had developed in the posterior cul-de-sac.

DR. HUTCHINSON, of Providence, expressed himself as emphatically in favor of the secondary current. He uses a large coil of some miles of wire, made so that it is tapped at various points so that it can be increased or diminished in force at will.

In a good many years of practical work he has not found any difference in the faradic effects of one pole or the other. The varying number of feet or yards of wire has an effect on the circulating current.

DR. WALLING, of Philadelphia, suggested that perhaps some of the effects noted are due to the rapidity of the vibrations rather than to the coil used. In using the secondary coil he is accustomed to throw the whole coil in and take the current from the rheostat. In this way he obtains better results than in attempting to take a part of the coil. He distinguishes the polarity of the current. In many cases the positive pole appears to be more sedative in its influence than the negative, yet both will relieve pain.

DR. MORTON, of New York, made the point that there is a good deal of misunderstanding concerning the faradic current. The faradic current may be interrupted or alternating. The primary is alternating. A standard induction battery is desirable—a standard coil—a standard length of wire; then comparative observations could be made. Different results may be accounted for by differences in the character and length of the secondary coils. Polar effects may depend upon peculiarities of construction. As the number of coils is increased the voltage and force are also increased. As Dr. Gordon, as a result of his careful measurements, says: the induction-current, the secondary current of the break, measures thirteen times more in intensity than the same current of make. So the make of the primary exerts its entire influence in charging the coil of the secondary. If the current of the break is thirteen times

greater than the current of the make, then one of the impulses is thirteen times stronger than the other. One end of the line will do thirteen times more electrolytic work than the other. Dr. Morton, however, would not admit that the current-intensity of the make is not sufficient to penetrate the human tissues. If the electromotive force of the make, secondary, is not sufficient to penetrate the human tissues, the therapeutist is not treating disease by the alternating current at all, but by the interrupted current.

DR. WAITE expressed the view that to get at the proper coil it is necessary first to make a proper primary and then a secondary current. The number of vibrations has much to do with the sedative effect of the primary current.

DR. MASSEY, of Philadelphia, thought that the problem was one of a technical character and that much can be done when a meter is devised to measure the faradic current, for the whole question at the present time is very much in the same condition as that of the galvanic current was prior to the invention of the milliampère-meter. Dr. Massey has obtained marked contractile effects in certain myomas, in strong primary currents, and good contractile effects in the abdominal walls and intestinal walls by using large poles, one on the back and the other on the abdomen.

The variation between the primary and secondary currents is extremely remarkable. Patients who feel no contraction from the secondary current cannot stand one-quarter of a like strength from the primary. Why? Partly at least because it is in one direction, but more because there is more ampèrage, which is greater when the external resistance is small and the wire coarse.

DR. GOELET added that there is no doubt but that the faradic current as it is employed to-day is merely an interrupted and not an alternating current.

The more rapid the interruptions the more sedative the effect.

If the two currents are applied to resistances like the skin by small electros, one over the hand and another far away at some indifferent point, the current from the fine wire will produce a better contraction than the coarse, because there is more current. Still, if the resistance in the skin is cut down and made little or nothing, as when both electrodes are taken in the hand, or as in the vagina, then, of course, the electro-motive force is not so necessary. The same muscular contractions are not obtained as with the coarse-wire coil.

DR. BIGELOW said the secondary coil is too valuable to be lost sight of; it is because it is so little understood that it is not used more. He had found the apparatus that he was using satisfactory, but discarded it on account of the pain it caused. He expressed the hope that a standard instrument would be devised.

DR. L. A. W. ALLEMAN, of Brooklyn, N. Y., read a paper upon "The Treatment of Corneal Opacities by Galvanism." He had endeavored to test thoroughly the efficiency of galvanism in one class of cases, *i. e.*, opacities. After the subsidence of the corneal inflammation which has given rise to the opacity, the eye usually remains for some time in an irritable condition; it flushes easily, and shows evidence of a high vascularity, an increase of nutritive activity in the neighborhood of the scar. Sometimes vessels are seen running on to the cloudy area; and when this is the case the prognosis is relatively more favorable. For some little time the reparative process may go on with much activity, especially in young subjects; the cloud diminishes in density and extent, but more or less quickly it returns to a condition of normal nutrition; the scar-tissue becomes more resistant and the clearing up proceeds more and more slowly, till it finally ceases. In this stage much can often be accomplished by treatment. Such agents as an ointment of the yellow oxide of mercury, calomel dusted into the eye, massage, and the like, prolong the reparative process. But finally a stage is arrived at where the process is perfectly quiet, and no further absorption of the opaque tissue can be induced. It occurred to Dr. Alleman that in this stage the galvanic current was indicated. He believed the reason why it had not been more successful was that when used through the closed lids, the necessarily feeble current employed on the eye could not produce at the site of the lesion sufficient stimulation to bring about the desired effect, and to meet this indication he had an electrode made, consisting of a silver bar, 12 mm. in length, insulated, except at the ends, by a hard rubber shell; the exposed surface at the lower extremity is slightly concave, 7 mm. in diameter.

A battery of Leclanché cells, a Fleming milliampère-meter, and a rheostat complete the outfit. He uses for an electrode upon the cheek a carbon disc with a short metal handle which fits into a hard-rubber shell. The disc is covered with moist absorbent cotton, held in place by the shell, and is renewed each time the instrument is used.

The cathode is applied to the cornea. Before placing the electrode upon the cornea the patient is directed to touch it to the tip of his tongue, as this gives about the same resistance as through the cornea, and the rheostat is then adjusted until the strength of current desired is obtained. This seems a necessary precaution, as the cocainized cornea might be seriously damaged without any sensation of pain giving warning. The eye being previously well cocainized, the operator stands behind the patient, whose head is thrown back, and, holding the lids well apart with the thumb and first finger of the left hand, the electrode is brought in gentle contact with the cornea.

As a rule, the applications are of three minutes' duration. A strength of ½ milliampère, applied for from one to two minutes, is begun with; if the current is well borne the strength of current is gradually increased to from 1 to 1½ milliampères and the length of the sitting to three minutes.

The results of this method of treatment are satisfactory in the extreme. The duration of the opacity seems to make little difference in the prognosis. The visual results obtained will depend largely upon the position of the cloud. When concentric with the pupil, little improvement is seen till late in the treatment; but when the pupil is covered by the lap of the opacity, the visual improvement is very marked at the outset; this is due to the fact that the scar always clears up from the periphery toward the more dense center. When the scar vascularizes easily the prognosis is most favorable, however old or dense the opacity may be.

In the small, very white scars sometimes seen in adherent leucomata, it takes a very long time to influence

the center of the opacity, and the patient, who is elated by the marked visual improvement obtained by the first few treatments, becomes discouraged with the much slower progress of the central opacity; but in such cases as have persevered for some time there has been a slow but steady improvement, even in the dense white scars.

NEWS ITEMS.

The New York State Medical Association will hold its eighth annual meeting October 28, 29 and 30, 1891, at the Mott Memorial Hall, New York City.

The President, Dr. Stephen Smith, will deliver an address on The Art of Teaching Medicine.

Papers will be read as follows:

The Use of Chloroform in Labor. By Dr. Elbert T. Rulison.

Forced Respiration—Continued Observations. By Dr. George E. Fell.

Preventive Medicine. By Dr. Henry C. Van Zandt.

The Theories of Rheumatism. By Dr. John Shrady.

A Discussion on Acute Diffuse Peritonitis will be opened by Dr. Alfred L. Carroll, and will be participated in by many prominent physicians and surgeons.

Dr. Nicholas Senn will deliver the Address on Surgery.

Other papers will be read as follows:

Dislocation and Fracture of the Vertebræ. By Dr. Charles W. Brown.

Two cases of Forward and Outward Dislocation of the Astragalus, with Mode of Reduction and Result. By Dr. Douglas Ayres.

Larvæ of Dipteræ in the Human Intestine. By Dr. Homer O. Jewett.

Report of an Unusual Case: Was the Diagnosis Correct? By Dr. Simeon Tucker Clark.

Heredity and Environment. By Dr. Judson B. Andrews.

Traumatism, Shock; Moral Causes and Causes Operative at Physiological Epochs. By Dr. H. M. Hurd.

Arrest of Development and Diseases of Infancy. By Dr. E. N. Brush.

Bodily Diseases and Senility. By Dr. P. M. Wise.

Syphilis and Intemperance. By Dr. G. Alder Blumer.

Causes of Insanity Peculiar to Women. By Dr. W. D. Granger.

Tumors of the Orbit and Neighboring Cavities. By Dr. Charles Stedman Bull.

Biblical Medicine. By the Rev. Dr. William C. Bitting.

Orton Prize Essay.

Address on Gynecology. By Dr. A. Palmer Dudley.

Mental Therapeutics. By Dr. Henry D. Didama.

Subjects of Interest, Medical and Surgical. By Dr. John Cronyn.

An Ethical Imbroglio. By Dr. George E. Fell.

The Relation of Nervous Disorders to Indigestion in Women. By Dr. T. J. McGillicuddy.

Carcinoma Mammæ: What May We Expect After Operative Treatment? By Dr. John A. Wyeth.

Disease of the Knee-joint in the Convalescent Stage. By Dr. T. M. L. Chrystie.

Retro-bulbar Optic Neuritis. By Dr. Alvin A. Hubbell.

Typhoid Fever in Children. By Dr. William D Garlock.

Congenital Imperforate Rectum. By Dr. E. D. Ferguson.

The Tenth International Medical Congress at Berlin as I Saw It. By Dr. George Douglas.

Puerperal Eclampsia at the Seventh Month; Induced Labor; Recovery. By Dr. George E. Fell.

Biology and Medicine. By Dr. Hubbard W. Mitchell.

Lateral Curvature of the Spine Associated with Hernia. By Dr. S. E. Milliken.

Dr. James C. Wilson has been elected to the chair of the Practice of Medicine and Clinical Medicine in the Jefferson Medical College, made vacant by the resignation of the distinguished Dr. J. M. Da Costa.

BOOKS AND PAMPHLETS RECEIVED.

A Short Manual of Analytical Chemistry, Qualitative and Quantitative, Inorganic and Organic. Arranged on the Principle of the Course of Instruction given at the South London School of Pharmacy. By John Muter, M.D., Ph.D., F.R.S.E., F.C.S. First American from the Fourth English Edition, edited by Claude C. Hamilton, M.D., Ph.G. Philadelphia: Published by P. Blakiston, Son & Co., 1891.

Quiz Compends. Physiology. By Dr. A. P. Brubaker, A.M., M.D. Sixth Edition, Revised and Improved, with new Illustrations and a Table of Physiological Constants. Philadelphia: P. Blakiston, Son & Co., 1891.

Scientific Medicine in Its Relation to Homeopathy. By Professor Theodor Bakody, M.D., of the Buda-Pesth University Translated from the German by Rudolph Bauer, M.D. Philadelphia: Boericke & Tafel, 1891.

Addresses, Papers, and Discussions in the Section of Surgery and Anatomy at the Forty-Second Annual Meeting of the American Medical Association, at Washington, D. C., May 5–8, 1891. Chicago: Printed at the Office of the Association, 1891.

The Relation of Concussion of the Brain and Spinal Cord to Inflammatory and Other Morbid Conditions of these Organs. By B. A. Watson, A.M., M.D. Reprint, 1891.

Deaths from Chloroform and Ether since the Hyderabad Commission; with Conclusions. By Laurence Turnbull, M.D., Ph.G. Reprint, 1891.

Spasmodic Wry-neck and Other Spasmodic Movements of the Head, Face, and Neck. By Noble Smith, F.R.C.S. Ed. London: Smith, Elder & Co., 15 Waterloo Place, 1891.

A Report of Two Cases of Symptomatic Dermatitis in the Puerperal State. By W. Reynolds Wilson, M.D. Philadelphia: University of Pennsylvania Press, Reprint, 1891.

Our Public Institutions as Sources of Impairment of Vision. By J. A. Lippincott, A.B., M.D. Pittsburg, Pa.: Reprinted from the Transactions of the Medical Society of the State of Pennsylvania, June, 1891.

Conditions Following Parturition Requiring Abdominal Section. By E. E. Montgomery, M.D. Philadelphia: Reprint, 1891.

The Sloane Maternity Hospital. Report on the First Series of One Thousand Successive Confinements from January 1, 1888, to October 1, 1890. By James W. McLane, M.D. Reprint, 1891.

Handbook of Materia Medica, Pharmacy, and Therapeutics, including the Physiological Action of Drugs, the Special Therapeutics of Disease, Official and Practical Pharmacy, and Minute Directions for Prescription-Writing. By Samuel O. L. Potter, A.M., M.D. (Jefferson), M.R.C.P. (Lond.). Third Edition, Revised. Philadelphia: P. Blakiston, Son & Co.

Diseases of the Nasal Organs and Naso-pharynx. By Whitfield Ward, A.M., M.D. New York and London: G. P. Putnam's Sons, 1891.

A Handbook of Obstetrical Nursing, for Nurses, Students, and

Mothers. By Anna M. Fullerton, M.D. Second Edition, Revised. Philadelphia: P. Blakiston, Son & Co., 1891.

Charaka-Samhita Translated into English. Published by Abinash Chandra Kaviratna. Calcutta: Printed by D. Dass & Co., Corinthian Press, New China Bazaar, 1890. (Pamphlet.)

The Malthusian Theory of Population. By W. H. Washburn, M.D. Reprint, 1891.

Some Experiments on Acetonuria in Diabetes Mellitus, and on the Physiological Action of Acetone in the Animal Organism. By G. Metzler, M.D. Reprint, 1891.

Transactions of the South Carolina Medical Association; Forty-first Annual Meeting, held in Anderson, S. C., June 9 and 10, 1891. Charleston, S. C.: Walker, Evans and Cogswell Co., Printers, 1891.

Manual of Childbed Nursing. By Charles Jewett, A.M., M.D. New York: E. R. Pelton, 1891.

Surgical Treatment of Intussusception. By N. Senn, M.D., Ph.D. Toronto: Reprint, 1891. Printed by The J. E. Bryant Co. (Limited).

The Scientific Rationale of Modern Wound Treatment. By Henry O. Marcy, A.M., M.D., LL.D. Chicago: Reprint, 1891.

Transactions of the Medical Society of the State of West Virginia; Twenty-fourth Annual Session, held at Fairmont, June 10, 11, and 12, 1891. West Virginia Printing Co., Printers.

Saunders' Question-Compends, No. 1. Essentials of Physiology arranged in the form of Questions and Answers. Prepared especially for Students of Medicine. By H. A. Hare, B.Sc., M.D. Third Edition, thoroughly Revised, and Enlarged by the addition of a series of handsome Plate Illustrations taken from the celebrated "Icones Nervorum Capititis" of Arnold. Philadelphia: W. B. Saunders, 1891.

"Pulmonary Consumption a Nervous Disease" (by Thomas J. Mays, M.D.) Considered as Such from a Practical, a Clinical, and a Therapeutic Standpoint. By Thomas J. Mays. Detroit: George S. Davis, 1891.

OFFICIAL LIST OF CHANGES IN THE STATIONS AND DUTIES OF OFFICERS SERVING IN THE MEDICAL DEPARTMENT, U. S. ARMY, FROM OCTOBER 6 TO OCTOBER 12, 1891.

BANISTER, JOHN M., *Assistant Surgeon.*—Granted leave of absence for four months.

SUTER, WILLIAM N., *Assistant Surgeon.*—Granted leave of absence for one month, to take effect on or about October 15, 1891.

OFFICIAL LIST OF CHANGES IN THE STATIONS AND DUTIES OF THE MEDICAL CORPS OF THE U. S. NAVY FOR THE WEEK ENDING OCTOBER 10, 1891.

DICKSON, S. H., *Surgeon.*—Ordered to Marine Barracks, Washington, D. C.

MAGRUDER, A. F., *Surgeon.*—Detached from Marine Barracks, Washington, D. C.

FEREBEE, N. McP., *Surgeon.*—Ordered to the U. S. S. "Atlanta."

DRENNAN, M. C., *Surgeon.*—Detached from tho U. S. S. "Atlanta."

TRYON, J. R., *Surgeon.*—Ordered to the U. S. S. "Chicago."

WALTON, J. C., *Medical Inspector.*—Detached from the U. S. S. "Chicago," and granted six months' leave.

KEENEY, J. F., *Passed Assistant Surgeon.*—Detached from the U. S. S. "Minnesota," and ordered to the Naval Hospital, New York.

CRANDALL, R. P., *Passed Assistant Surgeon.*—Detached from the Naval Hospital, New York, and ordered to the Naval Laboratory.

BOYD, ROBERT, *Assistant Surgeon.*—Detached from the Marine Rendezvous, Boston, and ordered to the U. S. S. "Chicago."

ALFRED, A. R., *Assistant Surgeon.*—Detached from the U. S. S. "Fern," and ordered to the U. S. S. "Kearsarge."

GATES, M. F., *Assistant Surgeon.*—Detached from the U. S. S. "Kearsarge," and ordered to the U. S. S. "Fern."

AMES, HOWARD E., *Surgeon*—Ordered as Delegate to the Public Health Association, Kansas City, Mo., October 20, 1891.

NORTH, JAMES H., *Assistant Surgeon.*—Resignation accepted September 8, 1891.

TO CONTRIBUTORS AND CORRESPONDENTS OF THE MEDICAL NEWS.

THE MEDICAL NEWS begs its contributors and correspondents to observe the following:

1. Contributors of original articles, lectures, clinical memoranda or hospital notes, will, upon publication of their communications, be liberally paid, either

a. In cash, or

b. In reprints (250).

It should be distinctly stated, either at the head of the communication or in the accompanying letter, which method is preferred.

2. Copies or abstracts of papers must not have been or must not in the future be furnished any other journal, or published elsewhere, unless the fact have been clearly stated prior to the acceptance by us of the article. *Without an understanding to the contrary, it is held to be a matter of simple honesty that communications sent* THE NEWS *are for its exclusive use.*

3. The rejection of a manuscript does not necessarily imply any adverse editorial judgment as to its literary or scientific value. There are many other reasons that often prevent the acceptance of a manuscript. It may, for example, be rejected because another and similar article upon the same subject has already been accepted and awaits publication; because it could not be published for so long a time that it would become unseasonable; because it would more appropriately appear in some other journal, etc., etc. We cannot undertake to explain the especial reason for not accepting a paper.

4. The probability of the acceptance of an article, as well as the likelihood that it will be extensively read, is greatly enhanced by its brevity. Useless introductions and more useless perorations are always well omitted. Expression should be condensed; not so much as to exclude or to render obscure important things, but sufficiently to economize the time of the busy and tired practitioner and save mental friction in clearly comprehending the article. The results of good thinking, good observation, or good work, can be given in few words—and, with certain rare exceptions, it is results that medical men want.

5. THE NEWS especially desires brief, crisp clinical memoranda and short, concise articles on living subjects—articles epitomizing observations and facts occurring almost daily in the practice of every practitioner. A vast deal of material highly valuable to medical science and to humanity is constantly lost because busy men feel that they have not the time or ability to write elaborate papers. This is wrong. Everyone has some peculiar experience, sees exceptional aspects and phases of disease, has peculiar abilities or methods of practice, comes repeatedly upon a highly anomalous, suggestive, instructive, or interesting case. If such cases were properly placed on record, medicine would be greatly advanced. THE NEWS desires to become the medium of such publication and record.

6. Communications should be prepared in compliance with the following suggestions:

a. Paper larger than 8 × 10 inches should never be used.

b. The paper should be good, white writing paper, not news or tissue-paper.

c. If possible, a manuscript should be type-written.

d. Only one side of the paper should be written upon.

e. A blank margin, at least one inch wide, should be left at the left-hand side of the sheet.

f. Communications should be written in black, non-copying ink.

g. Writing, and especially all proper names, should be distinct and plain.

h. A sheet on which many corrections, interlineations, etc., have been made, should be rewritten.

i. If possible, manuscript should never be folded or rolled.

7. Communications in reference to subscriptions, advertisements, or other business should be addressed to the publishers, MESSRS. LEA BROTHERS & CO., 706 and 708 Sansom Street, Philadelphia. Communications pertaining to the reading columns should be addressed to the Editor:

GEORGE M. GOULD, M.D.,
1004 WALNUT STREET, PHILADELPHIA.